

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

FIG. 1

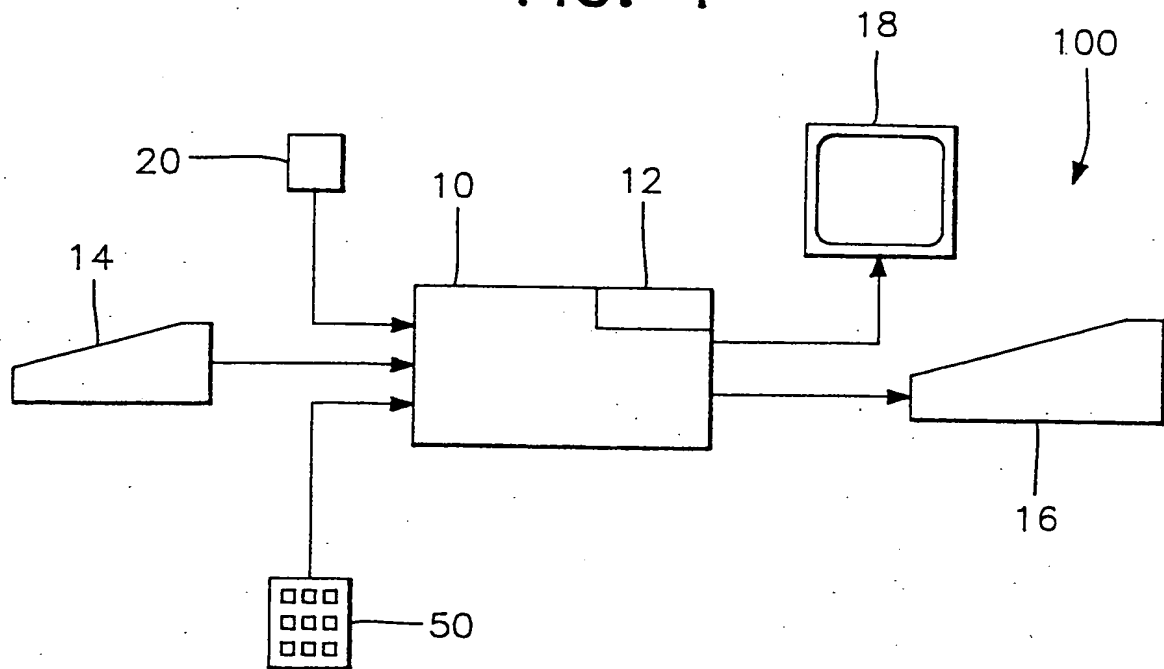
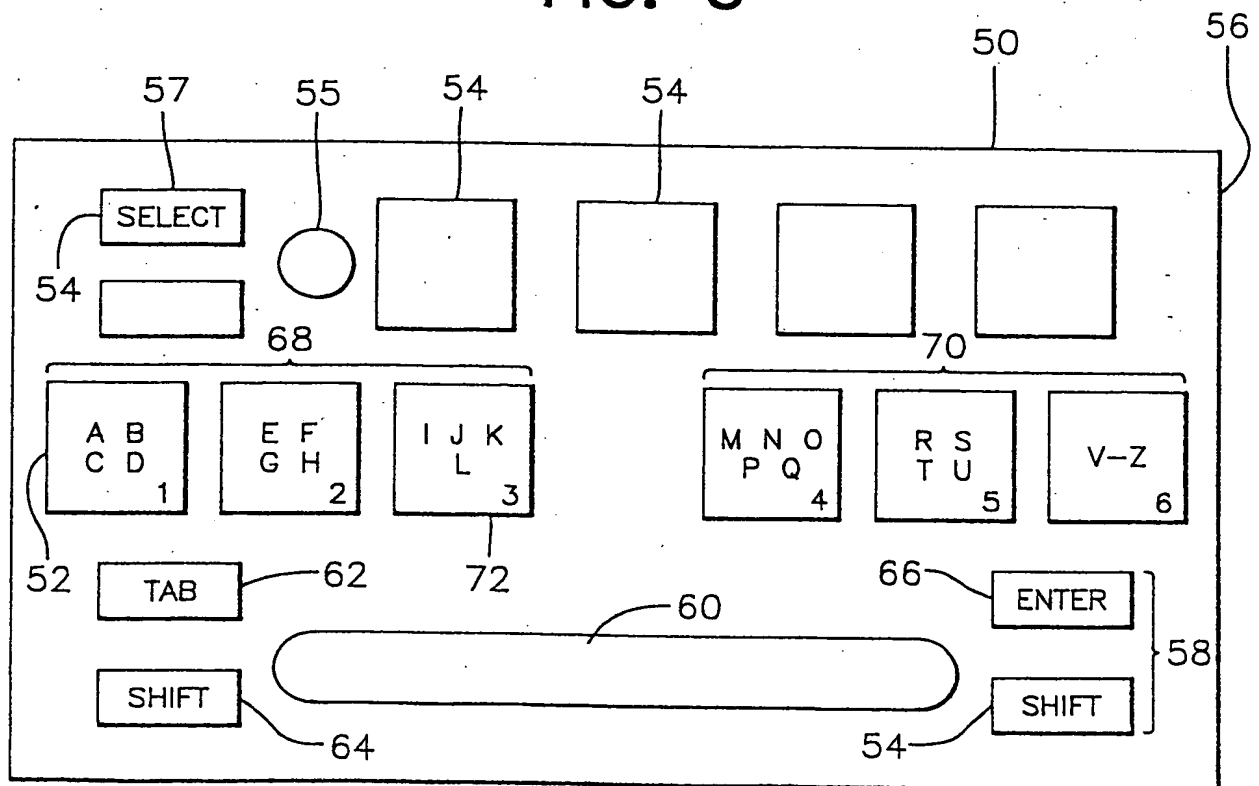


FIG. 3



# FIG. 2a

23

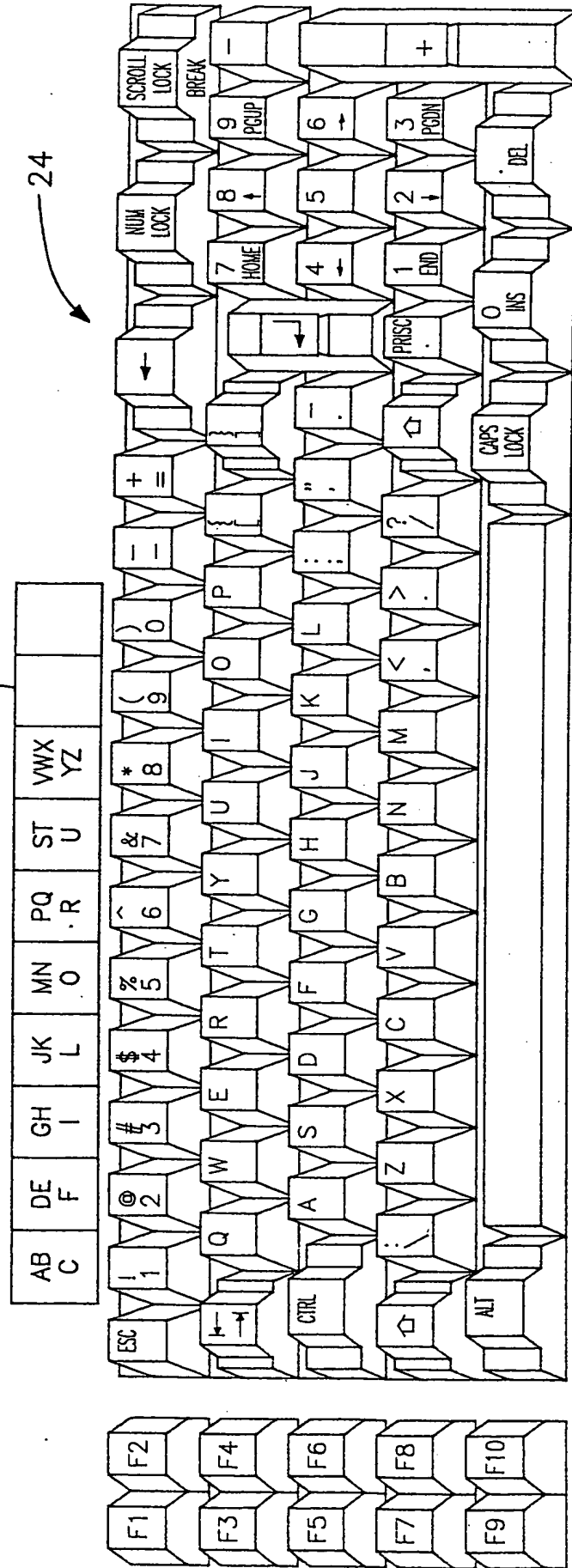


FIG. 2b

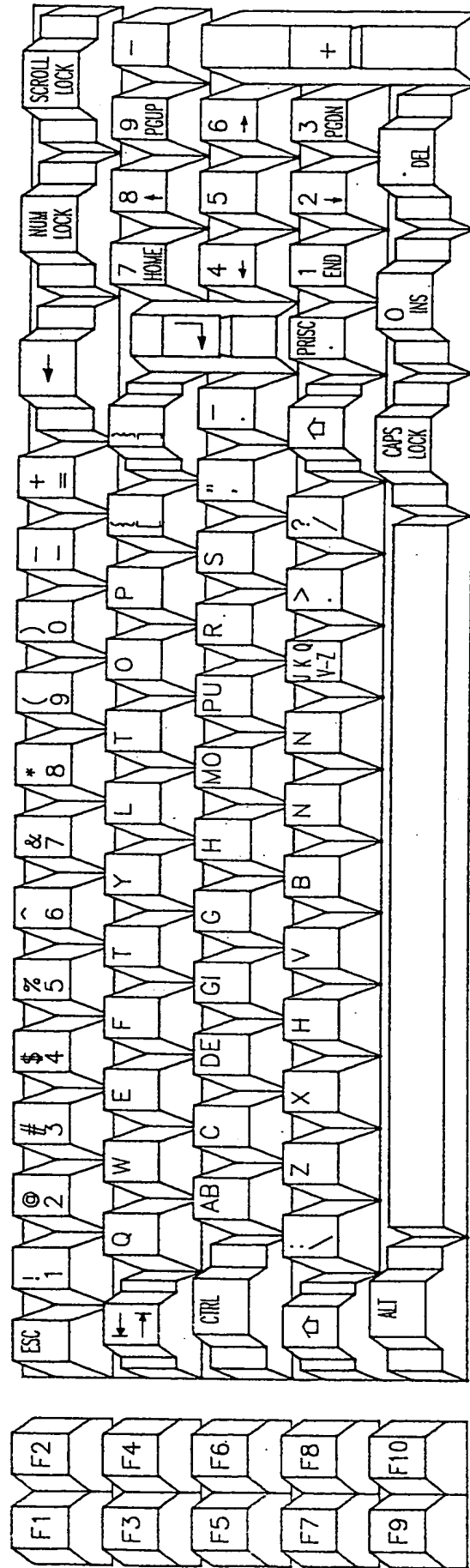


FIG. 4a

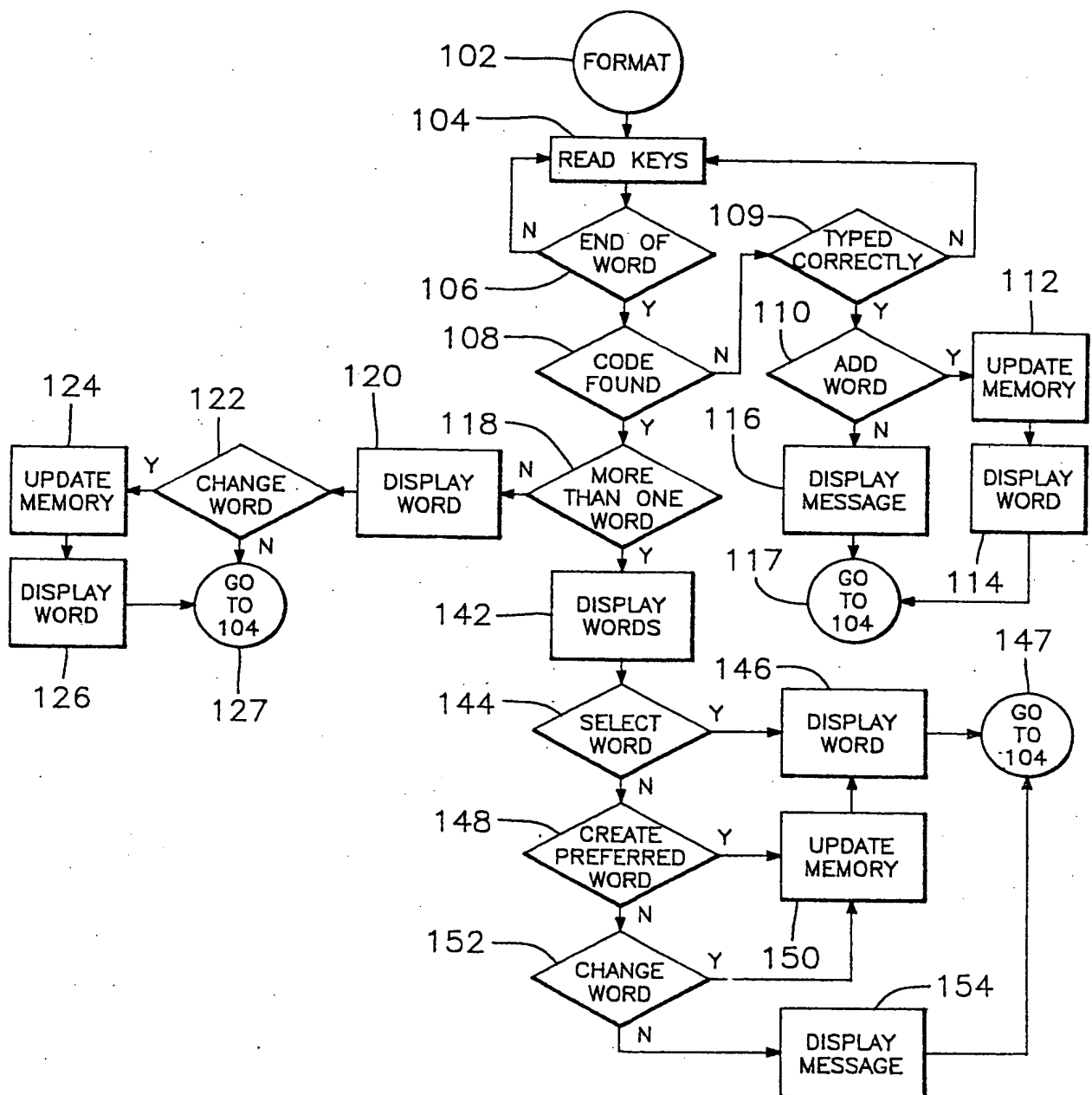


FIG. 4b

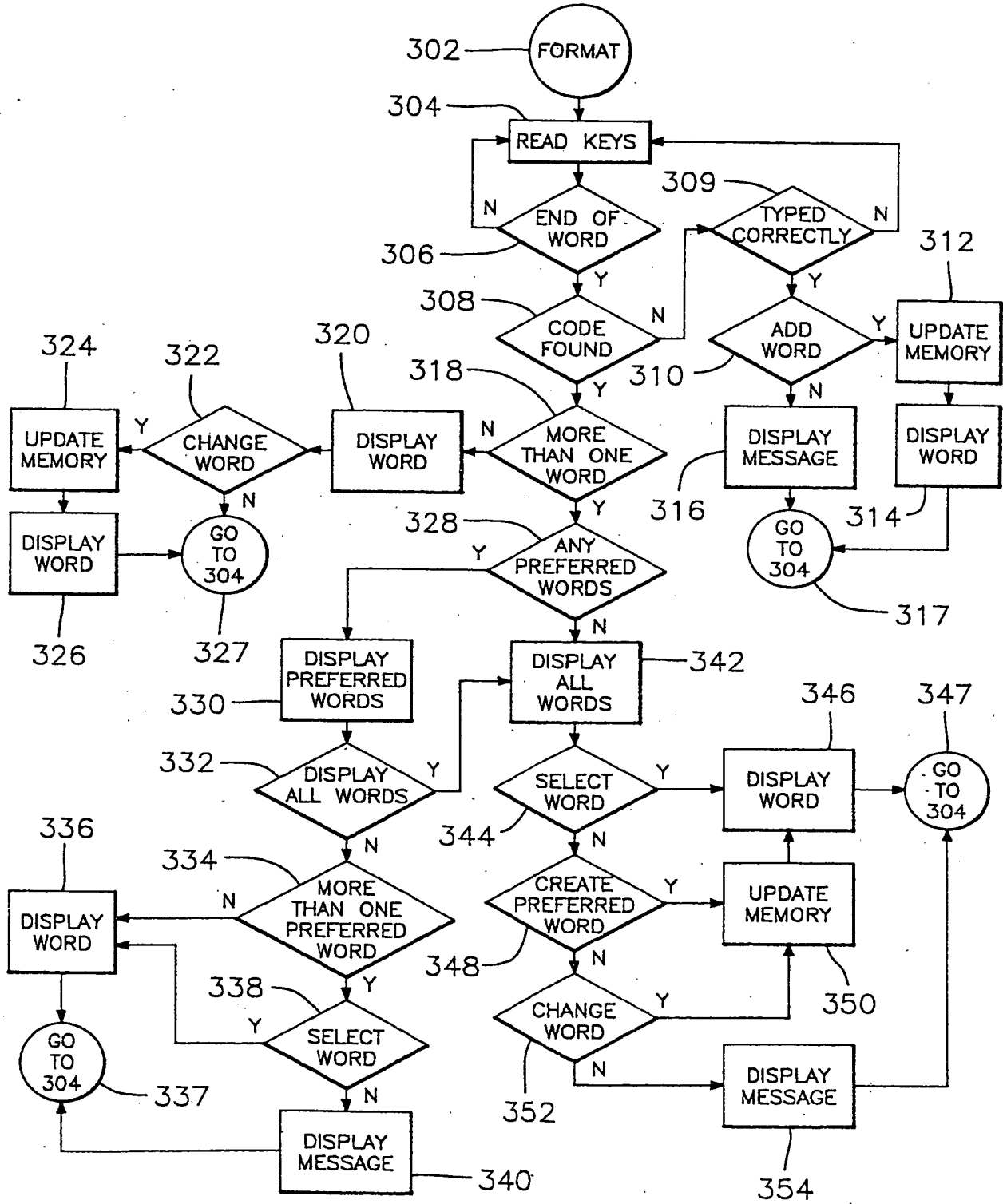


FIG. 5

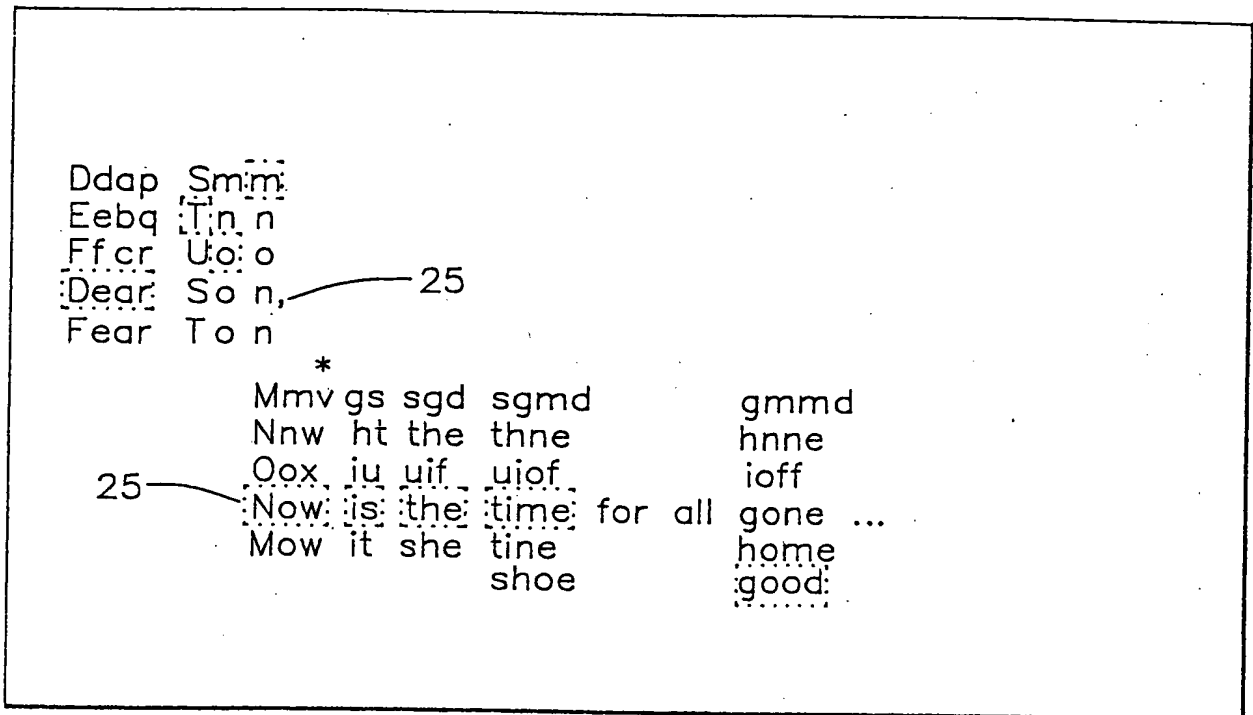


FIG. 7

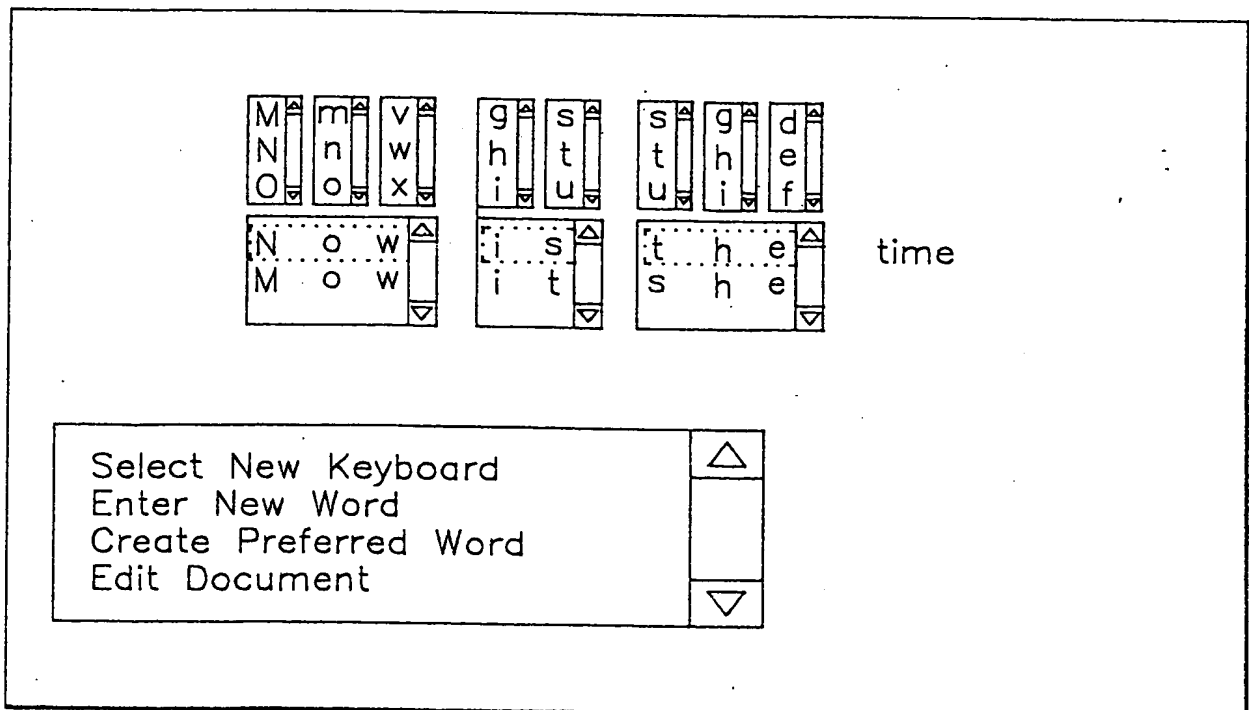


FIG. 6

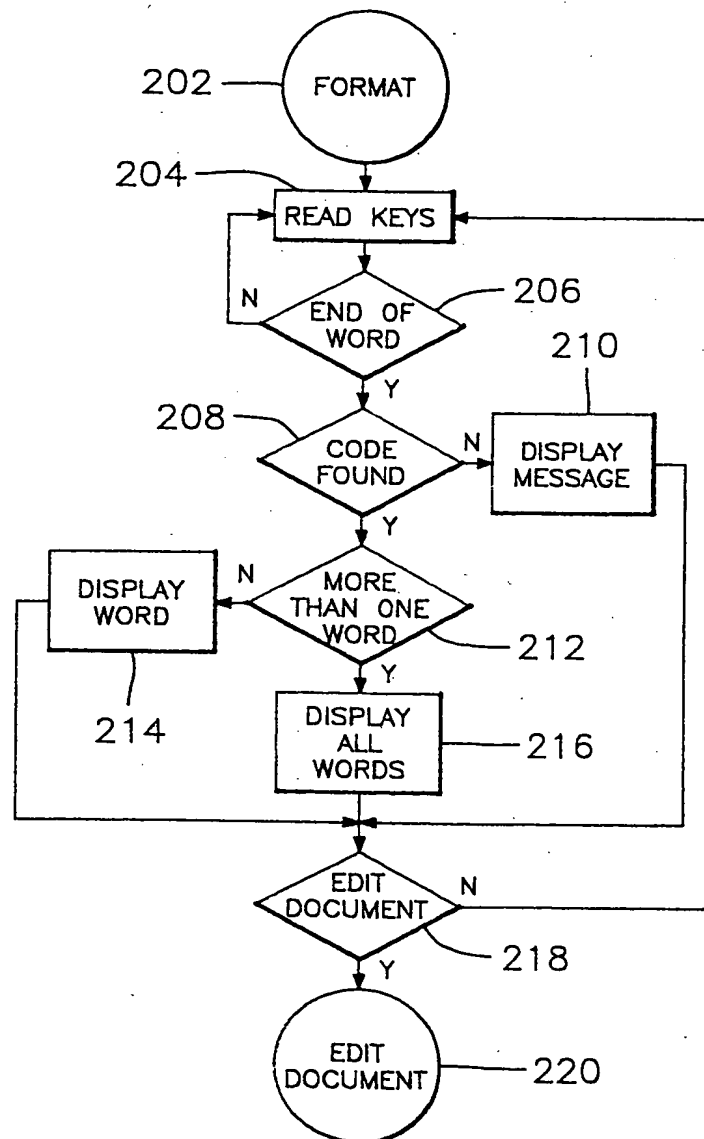




FIG. 8a

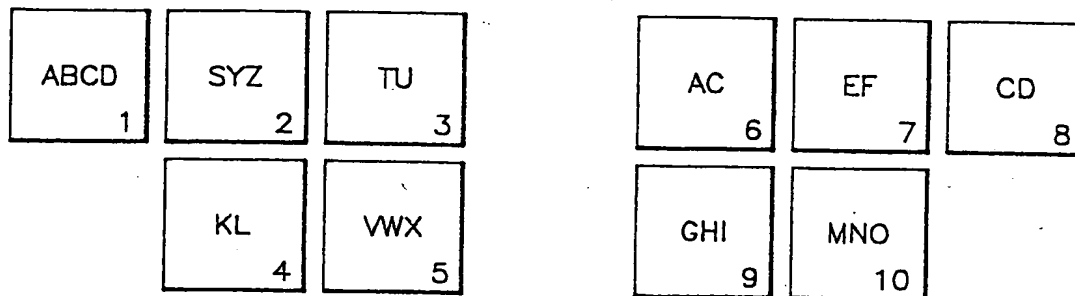


FIG. 8b

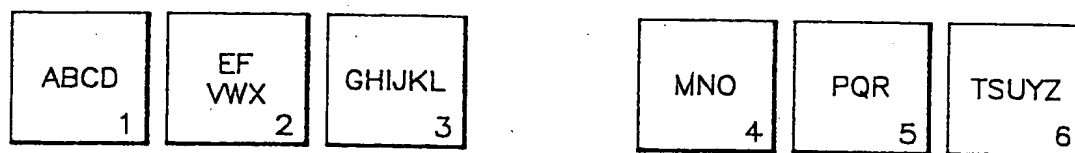


FIG. 8c

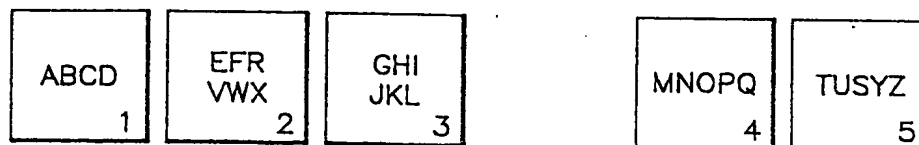


FIG. 8d

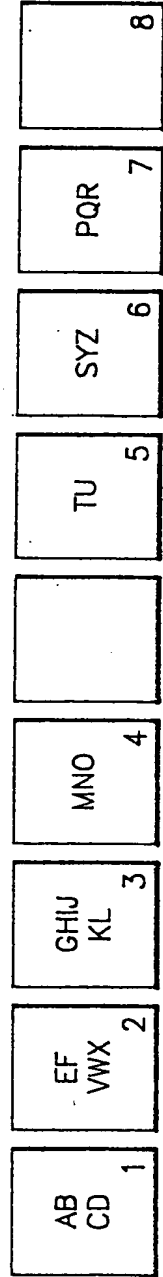


FIG. 9

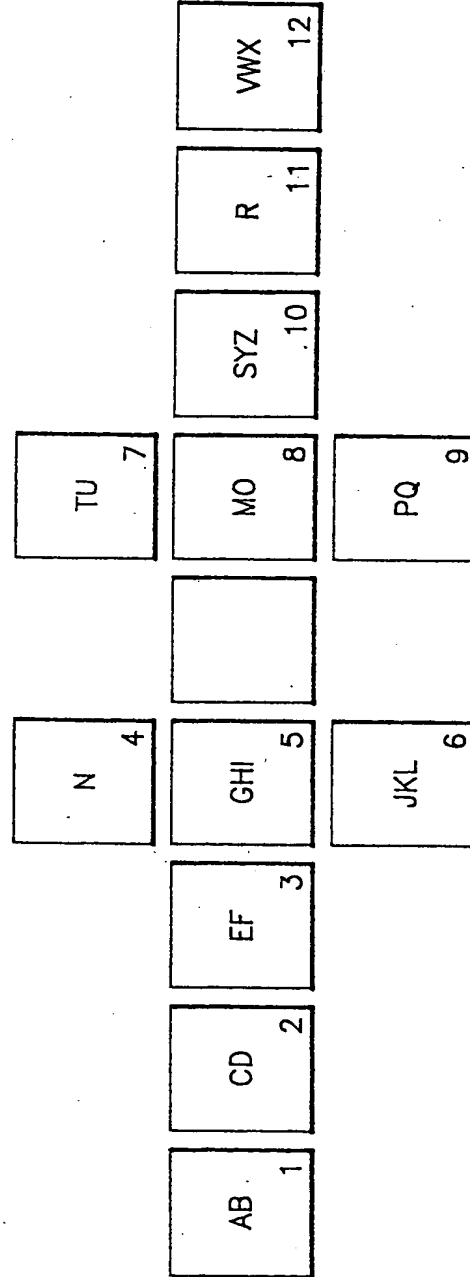


FIG. 10

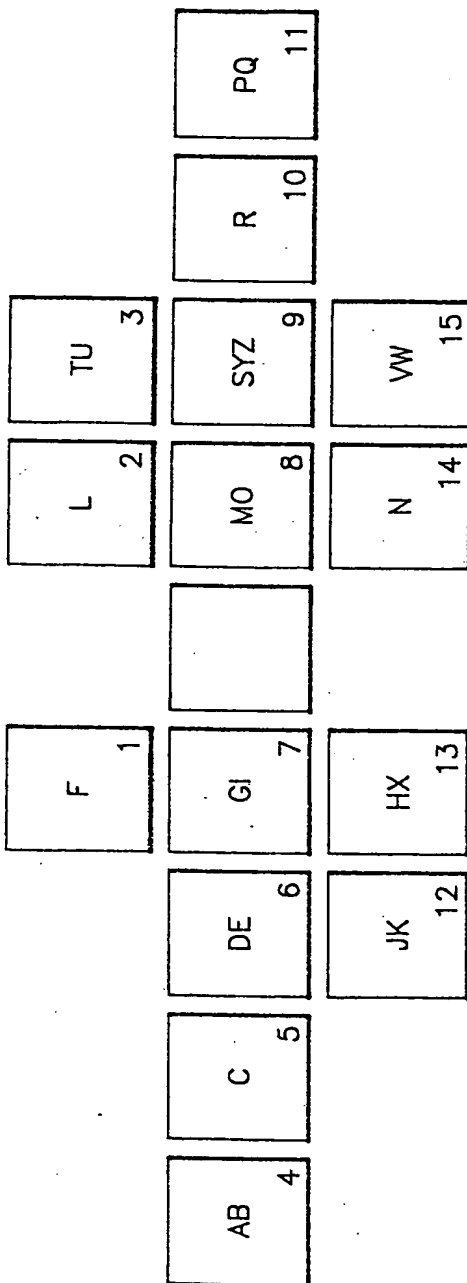


FIG. 11

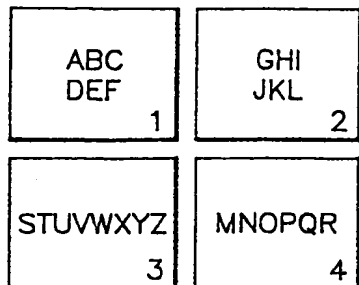


FIG. 12

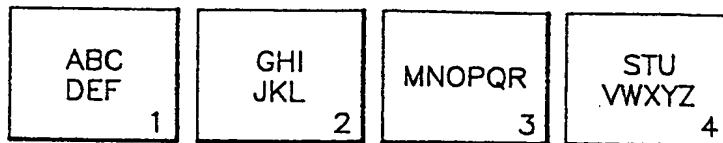


FIG. 13

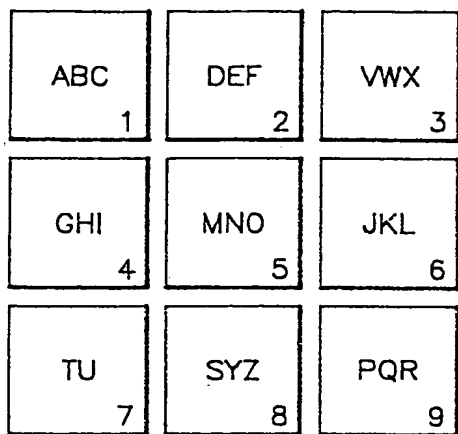


FIG. 14

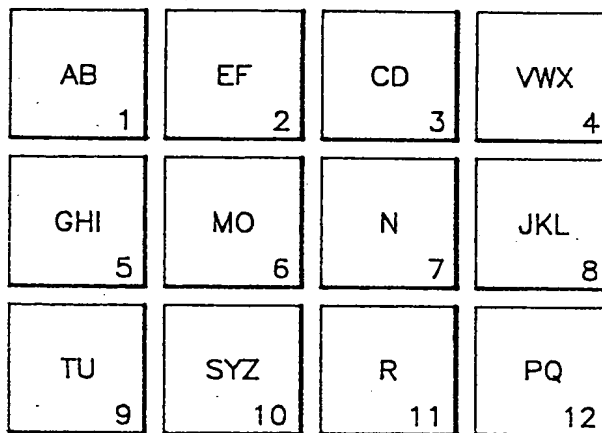


FIG. 15

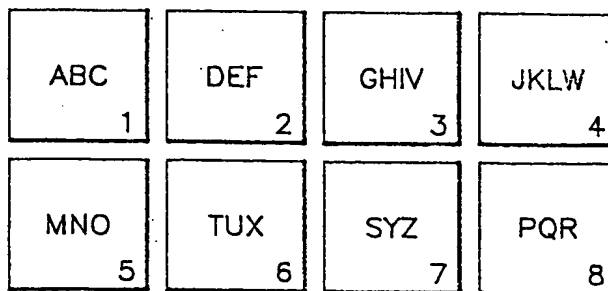


FIG. 16

JKL 1	AB 2	EF 3	CU 4	D 5
G 6	HIX 7	MO 8	N 9	VW 10
 11	T 12	SYZ 13	R 14	PQ 15

FIG. 17a

AB 1	CD EF 2	EF CD 3
GHI 4	MNO 5	JKL 6
TU 7	SYZ 8	PQR 9
VWX 10		

FIG. 17b

ABCD 1	EF VWX 2	GHIJKL 3
MNO 6	PQR 7	TSUYZ 8

FIG. 17c

ABCD 1	EFR VWX 2	GHI JKL 3
MNO PQ 4	TUS YZ 5	

FIG. 17d

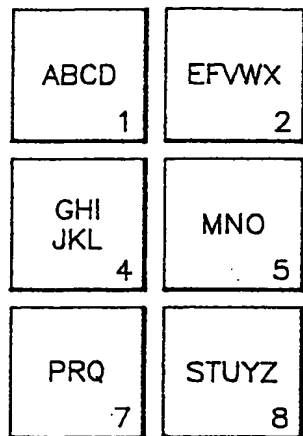


FIG. 18

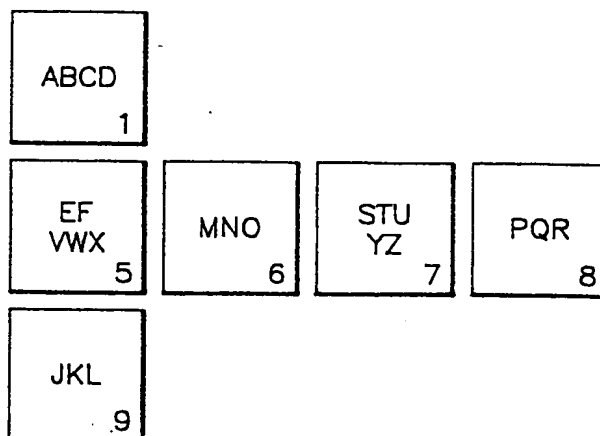


FIG. 19

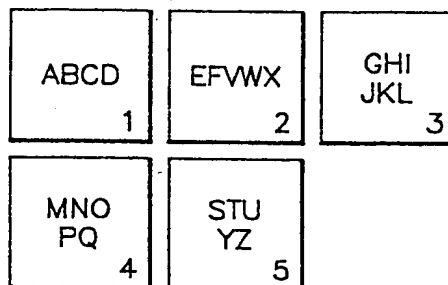


FIG. 20

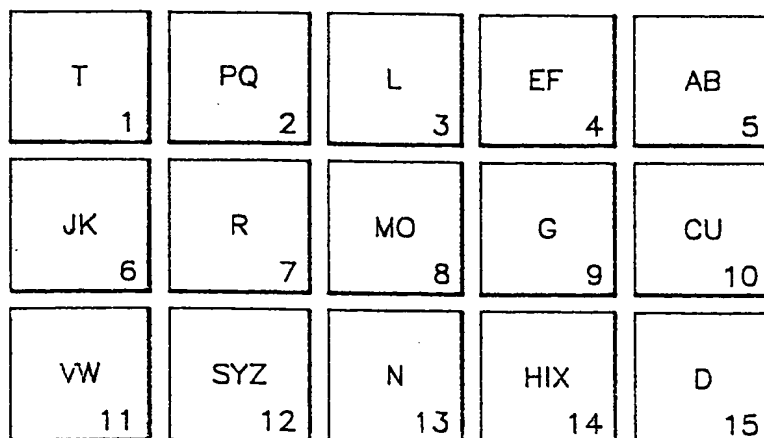
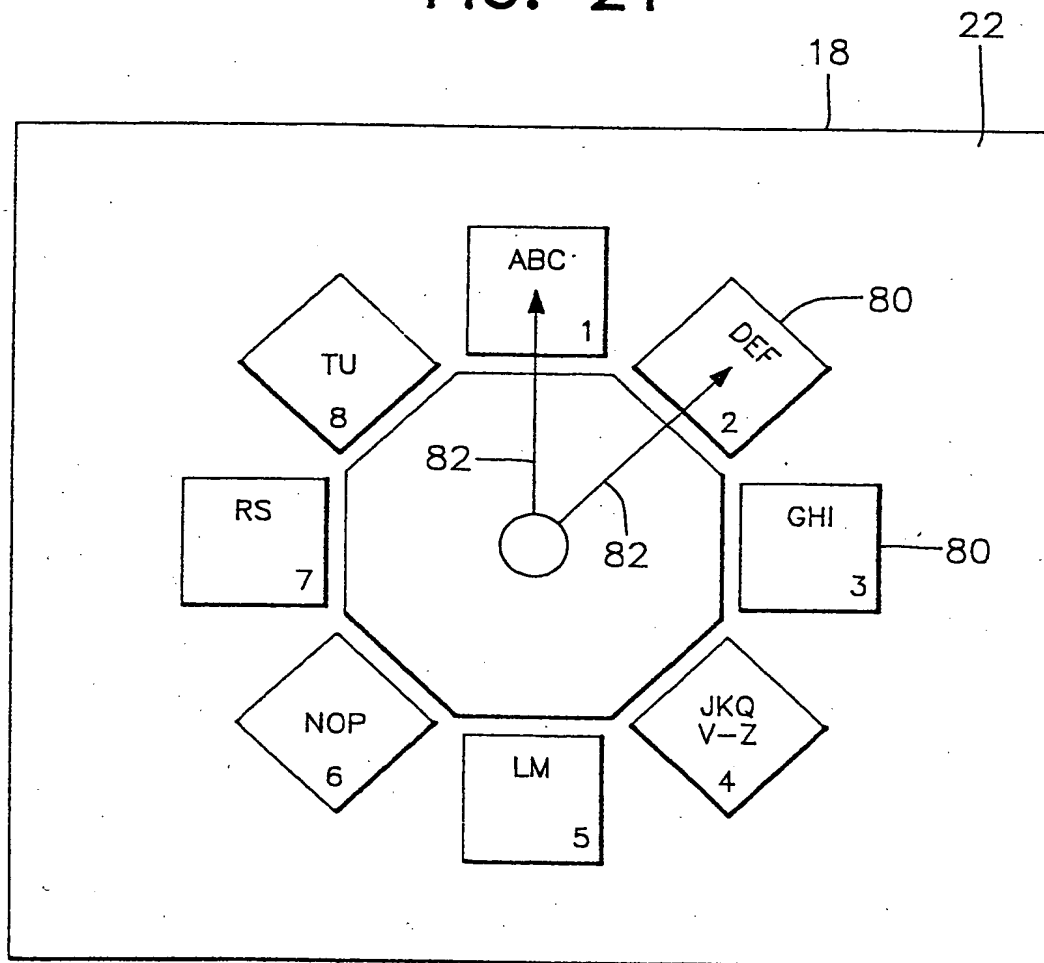


FIG. 21



# FIG. 22a

	A	B	C	D	E	F	G	H	I	J	K	L
A		12	14	11	243	13	8	11	293	0	9	51
B	12		104	104	32	99	105	67	1	33	15	91
C	14	104		70	16	79	73	84	7	17	21	79
D	11	104	70		53	68	88	65	6	18	69	128
E	243	32	16	53		11	38	39	138	1	65	71
F	13	99	79	68	11		49	55	1	23	26	88
G	8	105	73	88	38	49		36	3	16	39	54
H	11	67	84	65	39	55	36		3	21	35	108
I	293	1	7	6	138	1	3	3		2	2	23
J	0	33	17	18	1	23	16	21	2		1	23
K	9	15	21	69	65	26	39	35	2	1		63
L	51	91	79	128	71	88	54	108	23	23	63	
M	10	122	79	111	28	23	73	78	0	19	47	117
N	24	63	97	120	60	65	66	42	15	13	50	160
O	314	14	16	14	223	7	14	17	190	3	5	37
P	15	145	116	122	46	100	84	101	4	24	53	128
Q	0	0	0	0	0	0	3	0	0	0	0	0
R	62	102	86	176	50	69	67	100	21	22	53	269
S	35	90	116	92	32	97	65	75	9	17	33	126
T	22	126	147	209	121	107	120	121	10	25	89	173
U	214	3	4	8	96	3	4	2	167	0	4	11
V	4	27	35	51	7	29	31	18	1	7	33	49
W	13	90	67	68	25	59	63	78	14	13	24	72
X	6	9	4	9	6	1	11	0	0	0	3	5
Y	18	30	13	43	109	13	31	23	17	7	9	24
Z	1	9	11	23	5	3	7	6	0	2	9	17



FIG. 22b

	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	10	24	314	15	0	62	35	22	214	4	13	6	18	1
B	122	63	14	145	0	102	90	126	3	27	90	9	30	9
C	79	97	16	116	0	86	116	147	4	35	67	4	13	11
D	111	120	14	122	0	176	92	209	8	51	68	9	43	23
E	28	60	223	46	0	50	32	121	96	7	25	6	109	5
F	23	65	7	100	0	69	97	107	3	29	59	1	13	3
G	77	66	14	84	0	67	65	120	4	31	63	11	31	7
H	72	42	17	101	0	100	75	121	2	18	78	0	23	6
I	0	15	170	4	0	21	9	10	167	1	14	0	17	0
J	19	13	3	24	0	22	17	25	0	7	13	0	7	2
K	47	50	5	53	0	53	33	89	4	33	24	3	9	9
L	117	160	37	128	0	269	126	173	11	49	72	5	24	17
M		78	11	154	0	114	83	129	3	48	71	6	36	12
N	78		20	114	0	189	101	183	10	41	62	15	33	14
O	11	20		19	0	48	9	17	128	1	12	1	23	2
P	154	114	19		0	108	107	187	7	50	109	11	38	14
Q	0	0	0	0			2	0	0	0	0	0	0	0
R	114	189	46	108			119	164	24	57	68	9	27	18
S	83	101	9	107	2	119		182	10	46	60	6	24	14
T	129	183	17	187	0	164	182		8	60	137	19	58	26
U	3	10	128	7	0	25	10	8		4	4	0	10	0
V	48	41	1	50	0	57	46	60	4		22	2	4	14
W	71	62	12	109	0	68	60	137	4	22		11	42	8
X	6	15	1	11	0	9	6	19	0	2	11		7	0
Y	36	33	23	38	0	27	24	58	10	4	42	7		1
Z	12	14	2	14	0	13	14	26	0	14	8	0	1	

FIG. 22c

1	AJ	AJ	AJ	AJK	AJK	AB	AB	AB	AB	AB
2	B	B	BU	BU	BU	C	CU	CD	CD	CD
3	C	C	C	C	C	D	D	EF	EF	EF
4	D	D	D	D	D	EF	EF	G	GHI	GHI
5	E	E	E	E	EF	G	G	HIX	JKX	JKL
6	F	F	F	F	G	HIX	HIX	JK	L	MO
7	G	G	G	G	HX	JK	JK	L	MO	N
8	H	H	HX	HX	L	L	L	MO	N	PQ
9	K	K	K	L	MI	M	MO	N	PQ	R
10	L	L	L	MI	N	NO	N	PQ	R	SYZ
11	MI	MI	MI	N	OV	PQ	PQ	R	SYZ	TU
12	N	N	N	OV	PQ	R	R	SYZ	TU	VWX
13	O	OV	OV	PQ	R	S	SYZ	TU	VW	
14	PQ	PQ	PQ	R	S	T	T	VW		
15	R	R	R	S	T	WUZ	VW			
16	S	S	S	T	W	VY				
17	T	T	T	W	YZ					
18	UXZ	UXZ	W	YZ						
19	V	W	YZ							
20	W	Y								
21	Y									
F#1	1	1	15	26	26	60	100	174	219	315
F#2	1	1	6	15	26	125	177	251	275	362
F#3	11	13	26	45	69	252	359	510	567	749
Edit (line)	1000	1000	200	100	60	15	10	6.5	6	4

FIG. 22d

1	AB	AB	ABC	ABC	ABCD	ABCD	ABCD
2	CD	CD	DEF	DEF	EFVWX	EFVWX	EFRVWX
3	EF	EF	GHI	GHIV	GHIJKL	GHIJKL	GHIJKL
4	GHI	GHI	JKL	JKLW	MNO	MNO	MNOPQ
5	JKL	JKL	MNO	MNO	PQR	PQR	TUSYZ
6	MNO	MNO	PQR	PQR	SYZ	TUSYZ	
7	PQ	PQR	SYZ	SYZ	TU		
8	R	SYZ	TU	TUX			
9	SYZ	TU	VWX				
10	TU	VWX					
11	VWX						
F#1	413	521	690	847	1094	1379	1711
F#2	500	624	836	968	1257	1588	2086
F#3	1053	1330	1870	2219	3091	4092	5918
Edit (line)	3	2.25	2.0	1.5	1.0	0.8	0.5

FIG. 22e

ABC	DEF	GHIZ	JKLY		MNO	PQR	SVW	TUX
-----	-----	------	------	--	-----	-----	-----	-----

FIG. 22f

AB	CD	EF	GHI		MNO	PQR	SYZ	TU
			JKL		VWX			

FIG. 22g

AB	CD	EF	GHI		MO	N	PQ	R
			JKL		TU	SYZ	VWX	

FIG. 22h

		D	JK		MO			
A	CU	EF	HIX		N	PQ	R	SYZ
		G	L		T	VW		

FIG. 22i

		D	JK		M			
AB	C	EF	HIX		NO	PQ	R	S
		G	L		T	VY	WUZ	

FIG. 22j

		MNO		JKL	
ABC	DEF	GHIZ		PQR	SWWY
		TUX			

FIG. 22k

		EF		JKL		
CD	AB	GHI		PQR	SYZ	VWX
	MNO	TU				

FIG. 22l

			JKL		N		
CD	AB	EF	GHI		PQ	R	SYZ
		MO	TU		VWX		

FIG. 22m

C	D	EF	AB					
G	JK	L	HIX		T	SYZ	R	PQ
		M	NO		WUZ	VY		

FIG. 22n

					MI			
AJ	B	C	D		N	PQ	R	S
E	F	G	H		OV	T	UXZ	W
		K	L		Y			

FIG. 22o

CD	EF	AB		N		
JKL	MO	GHI		SYZ	R	PQ
		TU		VWX		

FIG. 22p

CD	EF	AB		JKX	VW	
L	MO	GHI		SYZ	R	PQ
	N	TU				

FIG. 22q

D	C	B	AJ		L	N		
H	G	F	E		T	S	R	PQ
	K	MI	OV		UXZ	W	YZ	

FIG. 22r

ABC	DEF	
GHIZ	MNO	JKL
TUX	SVWY	PQR

FIG. 22s

	AB	EF	CD
VWX	GHI	MNO	JKL
	TU	SYZ	PQR

FIG. 22t

CD	AB	EF	GHI
JKL	M	NO	TU
PQ	R	SYZ	VWX

FIG. 22u

AB	CD	EF	GHI
JKX	L	MNO	N
PQ	R	SYZ	TU
		VW	

FIG. 22v

AB	CU	D	EF	G
JK	L	N	MO	HIX
PQ	R	SYZ	T	VW

FIG. 22w

AB	C	D	EF	G
JK	L	N	MI	HX
PQ	R	SO	TU	WX
		VY		

FIG. 22x

B	K	D	E	AJ
L	N	MI	HX	JK
PQ	R	S	T	OV
F	G	W	Y	UXZ

FIG. 23

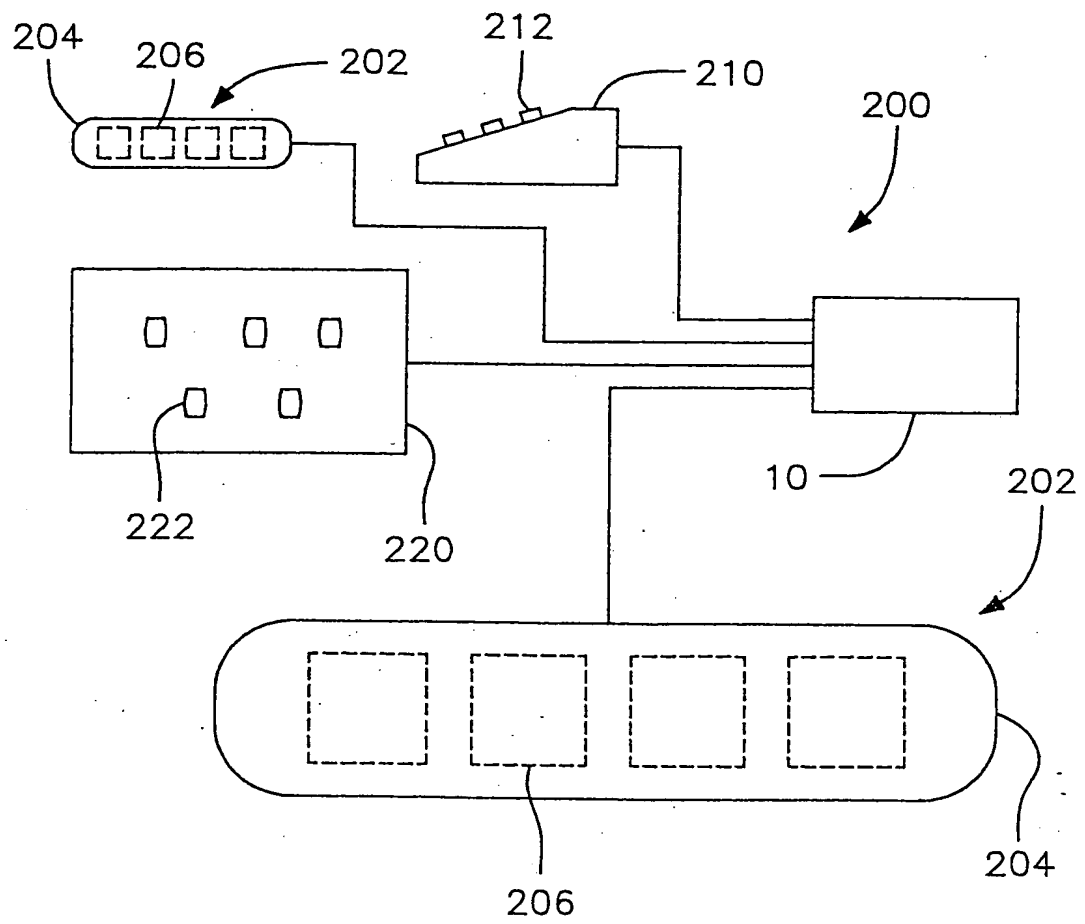




FIG. 24a

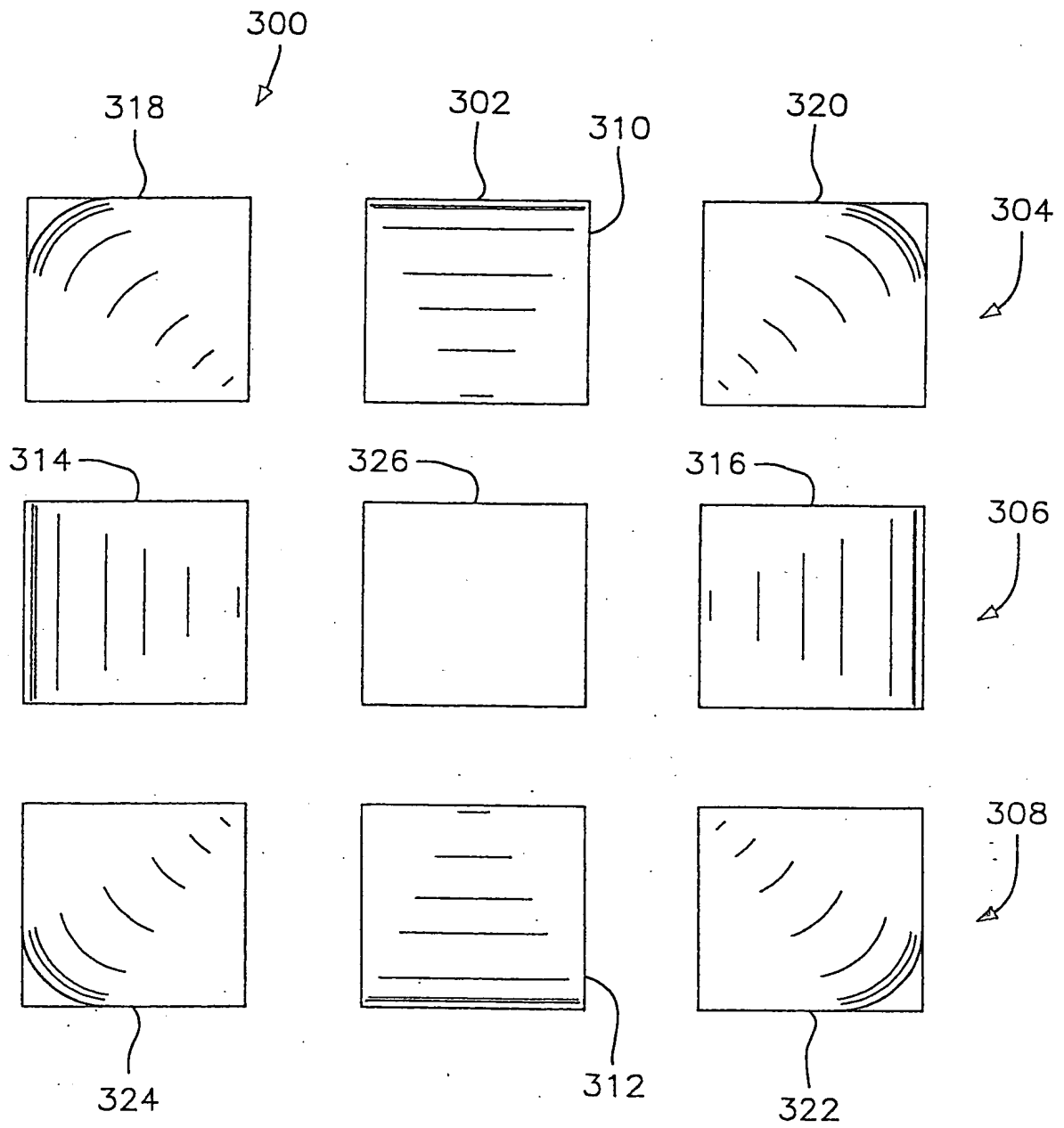


FIG. 24b

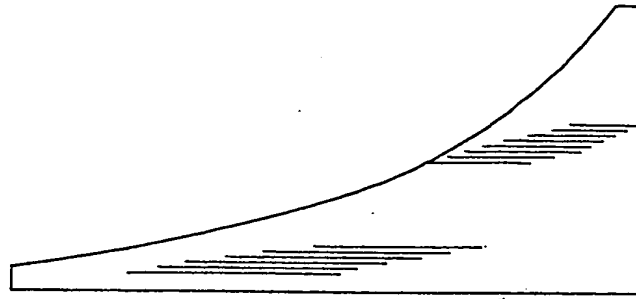


FIG. 24c

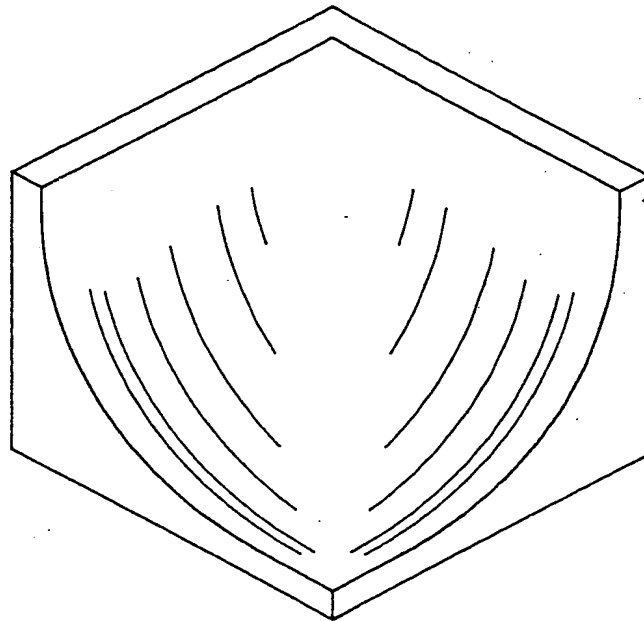


FIG. 25

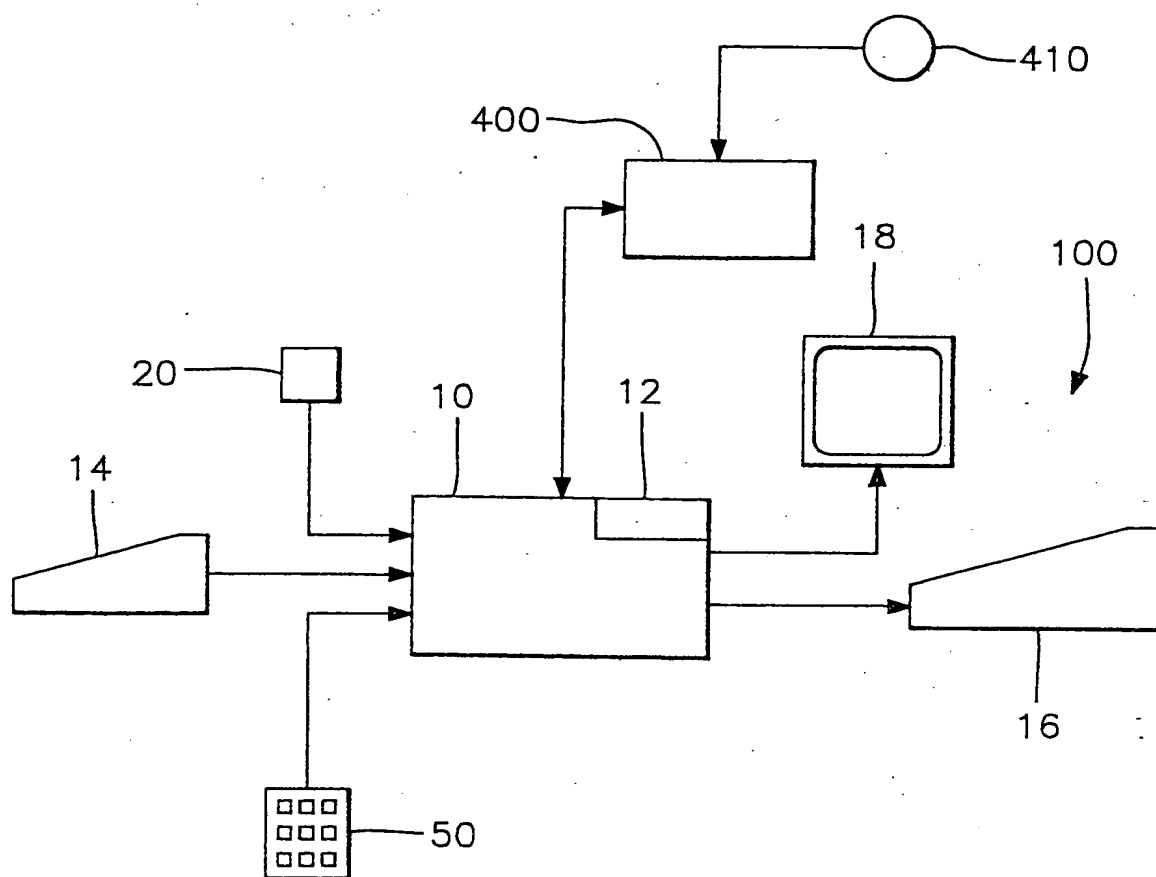


FIG. 26a

ABC	GHI	MNO	STU
DEF	JKL	PQR	V to Z

FIG. 26b

AB	EF	IJK	HOP	S to
CD	GH	LM	QR	Z

FIG. 26c

ABC	DEF	GHI	NOP	JKL	S to
			QR	M	Z

FIG. 26d

AB	EF	IJ	MN	STU	PQ
CD	GH	KL	O	M	R
			V to Z		

FIG. 26e

AB	EF	IJ	V to	MN	ST	PQ
CD	GH	KL	Z	O	U	R

FIG. 26f

J	GHI	DE	AB	MNO	PQR	STU
KL		F	C			
				V to Z		

FIG. 26g

DE	AB	MN	PQ
F	C	O	R
JK	G	V to	ST
	HI	Z	U

FIG. 26h

CD	EF	AB		NO	SYZ	R
M	JKL	GHI		TU	VWX	PQ

FIG. 26i

				N		
CD	EF	AB		MO	SYZ	R
JK	L	GHI		TU	VWX	PQ

FIG. 26j

					M		
	CD	EF	AB		NO	SYZ	R
JK	L	G	HI		TU	VWX	PQ

FIG. 26k

					M		
D	C	EF	AB		NO	SYZ	R
JK	L	HI	G		TU	VWX	PQ

FIG. 26l

					M			
D	C	EF	AB		NO	S	R	PQ
JK	L	G	HI		TU	VW	XYZ	

FIG. 26m

			C		M			
	B	EF	AB		N	PQ	R	S
JK	L	G	HI		TU	V	WX	YZ

FIG. 26n

DE	AB
F	C
JK	GH
L	I

MN	PQ	S
O	R	
U to	T	
Z		

FIG. 26o

JK	GH	DE	AB
L	I	F	C

MN	PQ	S	T
O	R		
U to Z			

FIG. 26p

JK	GH	DE	AB
L	I	F	C

MN	PQ	S
O	R	
T	U to Z	

FIG. 26q

CD	EF	AB
	JK	GH
	L	I

MN	PQ	S
O	R	YZ
TU	VW	
	X	

FIG. 26r

JK	CD	EF	AB
L			
			GH
			I

MN	PQ	S	T
O	R		
U to Z			

FIG. 26s

ABC	GHI
DEF	JKL
STU	MNO
V to Z	PQR

FIG. 26t

STU, V to Z			
ABC	GHI	MNO	
DEF	JKL	PQR	

FIG. 26u

STU	ABC	GHI	MNO
V to Z	DEF	JKL	PQR

FIG. 26v

ABC	GHI	MNO	STU
DEF	JKL	PQR	V to Z

FIG. 26w

AB	EF	
CD	GH	
FJK	NOP	S to Z
LM	QR	
S to Z		

FIG. 26x

S	AB	EF
to	CD	GH
Z	IJK	NO
	LM	PQR

FIG. 26y

AB	EF	IJ	NOP
CD	GH	KL	QR
	S to Z		

FIG. 27a

AB	GH	
C	I	
DE	JK	NO
F	LM	PQR
	S to Z	

FIG. 27b

AB	GH	NO
C	I	PQR
DE	JK	S to Z
F	LM	Z

FIG. 27c

AB	DE	GH
C	F	I
JK	NO	S to Z
LM	PQR	Z

FIG. 27d

AB	EF	
C	GH	
IJ	MN	
KL	O	
T	S	PQR
XYZ	UVW	

FIG. 27e

AB	EF	TX	
CD	GH	YZ	
IJ	MN	SU	P
KL	O	VW	QR

FIG. 27f

AB	EF	
CD	GH	
IJ	MN	
KL	O	
T	SW	P
UV	XYZ	QR

FIG. 27g

AB	EF	T	
CD	GH	UV	
FJ	MN	SW	PQ
KL	O	XYZ	R



FIG. 27h

AB	EF	
CD	GH	
IJ	MN	
KL	O	
V to	S	P
Z	TU	QR

FIG. 27i

AB	E	V to	
CD	FGH	Z	
IJ	MN	S	PQ
KL	O	TU	R

FIG. 27j

AB	EF	S
CD	GH	TU
IJ	MN	PQ
KL	O	R
V to Z		

FIG. 27k

ABC	GHI	MNO
DEF	JKL	PQ
	R	
S	T	
XYZ	UVW	

FIG. 27l

AB	DE	GH	JK
C	F	I	L
MN	PQ	ST	V to
O	R	U	Z

FIG. 27m

AB	DEF	GH	JKL
C		I	
MN	PQ	ST	
O	R		
	U to Z		

FIG. 27n

U to Z	AB	DE	GH	JK
	C	F	I	L
	MNO	PQR	ST	

FIG. 27o

ABC	DE F	GH I	JK L
MN O	PQ R	S	T
	U to Z		

FIG. 27p

U to Z	ABC	DEF	GH I	JK L
	MN O	PQ R	S	T

FIG. 27q

AB C	DE F	GH I	JK L
MNO	PQ R	S	
T	U to Z		

FIG. 27r

AB C	DE F	GH I
MN O	PQ R	S
T	U to Z	JK L

FIG. 27s

AB C	DE F	GH I
PQ R	MN O	JK L
S	T	U to Z

FIG. 27t

AB	EF	CD	
GHI	MO	N	JK L
TU	SY Z	R	P Q

FIG. 27u

AB	EF	CD	JK
GH	M O	N	L
TU	SY Z	R	PQ
	V W X		

FIG. 27v

AB	EF	CD	
GH I	MO	N	JK L
T	S	R	PQ
	V to Z		

FIG. 27w

AB	EF	CD	JK
GH I	M O	N	L
T	S	R	PQ
	V to Z		

FIG. 27x

AB	EF	CD	VW	G
HI X	MO	N	L	JK
TU	S YZ	R	P Q	

FIG. 27y

A	E	C	D	G
B	F	U		
HI X	NO	M	L	JK
T	SY Z	R	P Q	VW

FIG. 27z

AB	EF	CD	G	
HI	M	NO	L	JK
T	S	R	PQ	
	U	to	Z	

FIG. 28a

A	E	C	D	G
B	F			
HI	M	NO	L	JK
T	S	R	PQ	
	Z			
	V	to	Z	

FIG. 28b

AB	EF	CD
GH	MN	JK
I	O	L
T	SY	PQ
U	Z	R
V	W	X

FIG. 28c

	AB	EF	CD
JK	GH	M	N
L	I	O	
	TU	SY	PQ
		Z	Z
	V	W	X

FIG. 28d

AB	EF	CD
GH	MN	JK
I	O	L
T	S	PQ
		R
U	to	Z

FIG. 28e

	AB	EF	CD
JK L	GH I	NO	M
	T	S	PQ R
	U	to	Z

FIG. 28f

AB	CD	EF
GH	JK	MN
I	L	O
T	S	PQ
		R
	U to Z	

FIG. 28g

	AB	DE
1	C 2	F 3
GH	JK	MN
I 4	L 5	O 6
PQ	TU	WX
RS 7	V 8	YZ 9
*		#
	0	

FIG. 28h

A	E	C	D	G
B	F			
HI	M	O	N	L
T	S	R	P	J
			Q	K
	V	to	Z	

FIG. 28i

AB	EF	C	D	G
HIX	GO V	N	M	L
T	S	R	P Q	J K
YZ	UW			

FIG. 28j

AB	EF	C	D	G
HIX	OV	N	M	L
T	S	R	PQ	JK
YZ	UW			

FIG. 28k

A	E	C	D
B	F		
GH	M	OV	N
I			
T	S	R	P
			Q
X	U	L	J
YZ	W		K

FIG. 28l

A	E	C	D	G
B	F			
H	O	N	M	L
I				
T	S	R	P	J
			Q	K
U	W	X		
V		YZ		

FIG. 28m

A	E	D	C	B
HI	O	N	M	L
T	S	R	P	JK
			Q	
UV	W	X	F	G
		YZ		

FIG. 29a

AB	EF
CD	GH
MN	RS
OPQ	TU
IJ	VW
KL	XYZ

FIG. 29b

AB	EF
CD	GH
MN	IJ
OPQ	KL
RS	VW
TU	XYZ

FIG. 29c

AB	EF
CD	GH
IJ	MN
KL	OPQ
RS	VW
TU	XYZ

FIG. 29d

AB	EF	
CD	GH	
MN	PQ	ST
O	R	U
IJ	VW	
KL	XYZ	

FIG. 29e

AB	EF	
CD	GH	
MN	IJ	RS
OPQ	KL	
TU	VW	
	XYZ	

FIG. 29f

AB	EF	
CD	GH	
IJ	MN	RS
KL	OPQ	
TU	VW	
	XYZ	

FIG. 29g

AB	DE	GH
C	F	I
MN	PQ	ST
O	R	U
JK	VW	
L	XYZ	

FIG. 29h

AB	DE	GH
C	F	I
PQ	MN	JK
R	O	L
ST	VW	
U	XYZ	

FIG. 29i

AB	DE	GHI
C	F	
J	MN	PQ
KL	O	R
ST	VW	
U	XYZ	

FIG. 29j

AB	DE	GH
C	F	I
MN	PQ	S
O	R	
TU	JK	VW
	L	XYZ

FIG. 29k

AB	DE	GH
C	F	I
PQ	MN	JK
R	O	L
S	TU	VW
		XYZ

FIG. 29l

AB	DE	GHI
C	F	
J	MN	PQ
KL	O	R
S	TU	VW
		XYZ

FIG. 30a

* TAB	Q ....	W ...	E ..	R .	T .	Y .	U ..	I ..	O ...	P ...	{ [	}	← BACKSPACE
CAPS LOCK	A ....	S ...	D .	F .	G .	H .	J .	K ..	L ...	:	" ;		ENTER
⇧ SHIFT	Z ....	X ...	C .	V .	B .	N .	M ..	< .	> .	?	/	⇧ SHIFT	↵

FIG. 30b

* TAB	Q ....	W ...	E ..	R .	T .	Y .	U ..	I ..	O ...	P ...	{ [	}	← BACKSPACE
CAPS LOCK	A ....	S ...	D .	F .	G .	H .	J .	K ..	L ...	:	" ;		ENTER
⇧ SHIFT	Z ....	X ...	C .	V .	B .	N .	M ..	< .	> .	?	/	⇧ SHIFT	↵



FIG. 31a

17 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	C	D	H	M	*	N	S	:	W	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	*	AB	EF	IJK	*	*	OP	TU	XYZ	:	,	
	....	...	..	⊙	..	⊙	..	..	M	<	?	/
⇧ SHIFT	Z	X	C	V	L	*	B	N	V	.	.	⇧ SHIFT
	....	...	..	G	..	..	*	QR	.	.	.	⇧ SHIFT

FIG. 31b

16 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	C	D	H	M	*	N	S	:	W	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	*	AB	EF	IJK	*	*	OP	TU	XYZ	:	,	
	....	...	..	⊙	..	⊙	..	..	M	<	?	/
⇧ SHIFT	Z	X	C	V	L	*	B	N	VW	.	.	⇧ SHIFT
	....	...	..	G	..	..	*	QR	.	.	.	⇧ SHIFT

# FIG. 31c

15 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	C	D	GH	L	*	.	QR	S	XYZ	....	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	*	AB	EF	IJK	M	N	OP	TU	VW	...	,	
SHIFT ↵	Z	X	C	V	B	N	M	<	.	>	?	SHIFT ↵
	....	...	*	*	*	*	*	*	*	*	/	

# FIG. 31d

15 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	C	D	L	*	*	*	N	SZ	...	....	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	*	AB	EF	IJK	M	N	OP	TU	XYZ	...	,	
SHIFT ↵	Z	X	C	V	B	N	M	<	.	>	?	SHIFT ↵
	....	...	GH	M	*	*	QR	VW	*	*	/	

FIG. 31e

10 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER
SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	SHIFT

FIG. 32a

17 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER
SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	SHIFT

FIG. 32b

16 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	← BACKSPACE
.	...	AB	EF	IJK	*	*	N	S	...	...	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
	....	C	G	L	*	*	OP	TU	XYZ	:	.	;	
SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	SHIFT ↵
	....	D	H	M	*	QR	VW	..	.	.	.	.	

FIG. 32c

## 15 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
...	AB	...	EF	...	IJK	*	.	N	S	...	...	...	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	'	
...	C	...	GH	L	*	*	OP	TU	XYZ	;	,	ENTER	
	Z	X	C	V	B	N	M	<	>	?	/	↵	
SHIFT	...	D	...	M	*	*	QR	VW	.	.	.	SHIFT	

# FIG. 32d

14 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	AB	EF	IJK	M	.	.	N	S	VW	....	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	CD	GH	..	L	.	*	OP	TU	XYZ	;	,	
	....	Z	X	C	V	B	N	M	<	>	?	SHIFT ↵
SHIFT ↵				*	*	*	QR	*	.	.	/	!
				...								\

# FIG. 32e

12 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
	AB	EF	IJK	M	.	.	N	S	VW	....	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
	CD	GH	..	L	.	*	OPQ	TU	XYZ	;	,	
	....	Z	X	C	V	B	N	M	<	>	?	SHIFT ↵
SHIFT ↵				*	*	*	*	*	.	.	/	!
				...								\

FIG. 33a

18 Key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	← BACKSPACE
	AB	C	D	.	*	.	N	OP	QR	*	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
	EF	G	H	.	K	.	S	TU	V	:			
SHIFT ↵	Z	X	C	V	M	.	B	N	M	<	>	.	SHIFT ↵
	...	IJK	L	.	.	.	*	.	XYZ	,	.	.	! /

FIG. 33b

16 key

* TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	← BACKSPACE
	AB	C	D	.	*	.	N	OP	QR	*	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
	EF	G	H	.	K	.	S	TU	VW	:			
SHIFT ↵	Z	X	C	V	M	.	B	N	M	<	>	.	SHIFT ↵
	...	IJK	L	.	.	.	*	.	XYZ	,	.	.	! /

## 15 Key

* TAB	Q ....	W AB ...	E C ..	R D .	T * .	Y . .	U N .	I OP ..	O QR ...	P } { } [ ]	← BACKSPACE
CAPS LOCK	A ....	S EF ...	D GH ..	F IJK ⊙	G * .	H * .	J S ⊙	K TU ..	L VW ...	" ;	ENTER ↵
⇧ SHIFT	Z ....	X L ...	C M ..	V * .	B * .	N * .	M XYZ ..	< ,	> .	? /	⇧ SHIFT

## 14 Key

* TAB ↓	Q ....	W AB ...	E CD ..	R EF .	T * .	Y . .	U N .	I OP ..	O QR ...	P ... { } [ ]	← BACKSPACE	
CAPS LOCK			A ....	S GH ...	D IJK ..	F L °	G * .	H * .	J S °	K TU ..	L : : VW ...	ENTER ↓
SHIFT ⇧			Z ....	X ...	C M ..	V * .	B * .	N XYZ .	M * ..	< . .	> . .	⇧ SHIFT

# FIG. 33e

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	{ ]	← BACKSPACE
	AB	CD	EF	*	*	*	MN	OPQ	RS	....			
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"		ENTER
	GH	IJK	L	⊙	*	*	TU	VW	XYZ	...			↵
⇧ SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	⇧ SHIFT
	....	...	*	*	*	*	*	*	*	*			⇧ SHIFT

# FIG. 34a

Keys 14

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	{ ]	← BACKSPACE
	AB	CD	EF	*	*	*	LY	RX	V	W			
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"		ENTER
	GH	IJK	L	⊙	*	*	OPQ	TU	...	...			↵
⇧ SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	⇧ SHIFT
	....	...	*	*	*	*	*	*	*	*			⇧ SHIFT



FIG. 34b

Keys 10

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	}	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
				*	AB	EF	IJK	OPQ	TU	:	:	:	
⇧ SHIFT	Z	X	C	V	B	N	M	<	.	?	/	⇧ SHIFT	⇧ SHIFT

FIG. 34c

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
⇧ SHIFT	Z	X	C	V	B	N	M	<	.	?	/	⇧ SHIFT	
				*	GH	MN	SZ						

435

## Keys 11

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
.	....	...	..	*	.	CDX	GH	MN	VW	...	[ ]	
CAPS LOCK												
A	S	D	F	G	H	J	K	L	:	;	"	ENTER ↵
....	...	*	*	AB	EF	IJK	OPQ	TU	...	:	,	
SHIFT ↵												
Z	X	C	V	B	N	M	<	>	?	/	SHIFT ↵	!
....	...	*	*	*	LY	RSZ	.	.	.	.	.	

٥٤٣٦٠

## Keys 10

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
....	....	...	..	.	*	VW	XYZ	MN	...	...	[ ]	
CAPS LOCK		A	S	D	F	G	H	J	K	L	" ;	
		....	...	*	*	ABC	DEF	GHI	OPQ	TU	...	ENTER ↵
SHIFT ⇧		Z	X	C	V	B	N	M	< >	? /	⇧ SHIFT	⇧ SHIFT
		....	...	..	*	*	JKL	RS	.	.		

# FIG. 35a

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	← BACKSPACE
				*	*	AB	GH	MN	TU	XYZ	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
				*	*	CD	IJK	OPQ	VW	;			
⇧ SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	⇧ SHIFT
				*	*	EF	L	..	,				! /

# FIG. 35b

Keys 11

* TAB	Q	W	E	R	T	Y	U	I	O	P	{	}	← BACKSPACE
				*	*	AB	GHI	OPQ	VW	...	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
				*	*	CD	JKL	RS	XYZ	;			
⇧ SHIFT	Z	X	C	V	B	N	M	<	>	.	?	/	⇧ SHIFT
				*	*	EF	MN	TU	,				! /

FIG. 35c

Key 10

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
				*	*	ABC	JKL	RS	*	....	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
				*	*	DEF	MN	TU	XYZ	;	,	
SHIFT ↵	Z	X	C	V	B	GHI	OPQ	M	<	>	? /	SHIFT ↵
				*	*							

FIG. 35d

Keys 11

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
				*	*	AB	GHI	OPQ	W	*	....	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER ↵
				*	*	CDX	JKL	RY	TU	;	,	
SHIFT ↵	Z	X	C	V	B	EKV	MN	M	<	>	? /	SHIFT ↵
				*	*							

# FIG. 35e

Keys 9

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
					*	ABC	JKL	SYZ	*	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER
				*	*	DEF	MNO	TUX	VW	;	,	
SHIFT	Z	X	C	V	B	N	M	<	>	.	?	SHIFT
					*	CHI	PQR	*			/	

# FIG. 36a

Keys 14

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
					AB	CX	D	EF	GH	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	ENTER
				IJK	LY	M	N	OP	VW	;	,	
SHIFT	Z	X	C	V	B	N	M	<	>	.	?	SHIFT
				*	*	QR	SZ	*			/	

# FIG. 36b

Keys 13

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
SHIFT ↵	Z	X	C	V	B	N	M	TU	<	>	?	/	SHIFT ↵

# FIG. 36c

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	,	ENTER ↵
SHIFT ↵	Z	X	C	V	B	N	M	TU	<	>	?	/	SHIFT ↵

# FIG. 36d

Keys 11

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	;	ENTER ↵
			*	*	⊙	JKL	MN	OPQ	RX	...			
⇧ SHIFT	Z	X		C	V	B	N	M	<	>	?	/	⇧ SHIFT
			...	*	*	SZ	TU	WY	,	.			

# FIG. 36e

Keys 10

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	;	ENTER ↵
			*	*	⊙	JKL	MN	OPQ	RS	...			
⇧ SHIFT	Z	X		C	V	B	N	M	<	>	?	/	⇧ SHIFT
			...	*	*	TU	WYZ	..	,	.			

# FIG. 37a

Keys 13

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
		RY	LX	D	C	*	*	..	...	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	
	TU	OPQ	IJK	EF	AB	*	*	..	...	;	,	ENTER ↵
			Z	X	C	V	B	N	M	<	>	
⇧ SHIFT				SZ	MN	GH	VW	*	..	,	.	⇧ SHIFT
				...	..	.	.	.	.	.	/	! \

# FIG. 37b

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ }	← BACKSPACE
		VW	RY	LX	CD	*	.	..	...	...	[ ]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	
	TU	OPQ	IJK	EF	AB	*	*	..	...	;	,	ENTER ↵
			Z	X	C	V	B	N	M	<	>	
⇧ SHIFT				SZ	MN	GH	VW	*	..	,	.	⇧ SHIFT
				...	..	.	.	.	.	.	/	! \



FIG. 37C

Keys 10

* TAB	Q	W	E	R	T	Y	U	I	O	P	}	}	← BACKSPACE
	MN	...	XYZ	VW	.	*	.	..	...	....	[	]	
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	:	"	ENTER ↵
	TU	OPQ	GHI	DEF	ABC	*	..	..	...	;	;	,	
⇧ SHIFT		Z	X	C	V	B	N	M	<	>	.	?	⇧ SHIFT
	....	RS	JKL	*	*	.	.	..	,	.	.	/	

FIG. 38

Col I	Col II	Col I	Col II	Col I	Col II
QWERTY keyboard letters (Standard)	Redefined letter assignments to Col I Based on Fig. 31a	QWERTY keyboard letters (Standard)	Redefined letter assignments to Col I Based on Fig. 31a	QWERTY keyboard letters (Standard)	Redefined letter assignments to Col I Based on Fig. 31a
<u>Top row of keys</u>		<u>Middle row of keys</u>		<u>Bottom row of keys</u>	
Q		A		Z	
W	C	S	AB	X	
E	D	D	EF	C	G
R	H	F	IJK	V	L
T	M	G		B	
Y		H		N	R
U	N	J	OPQ	M	V
I	S	K	TU		
O	W	L	XYZ		
P					

## FIG. 39

Display #1 He is very E  
F

Display #2 He is very ER  
FR

Display #3 He is very ERA  
ERB  
FRA

Display #4 He is very ERBI  
FRAI

Display #5 He is very FRAIL

## FIG. 49

FREQUENCY OF USE OF LETTERS ASSIGNED  
BELOW HOME LINE — FOR FIRST LETTERS  
OF WORDS

BELOW HOME LINE	
B	1211 words
E	811 words
J	179 "
V	459 "
U	606 "
X	10 "
Z	74 "
Q	109 "
TOTAL	3,464 WORDS

$$3,464/21,084 = 16.4\%$$

# FIG. 40

Letters are redefined as shown in Fig. 1

Case#	Word being entered	Display#	1st	2nd	3rd	4th	5th	6th	7th	8th
1	GREAT	G		GR	GRE	GREA	GREAT			
2	ABAFT	A		AA				ABAFT		
		B		AB	ABA	ABAF	ABAFT			
				BA	BAB	BABE				
3	RELAY	R		RE	REL	RELA	RELAY	RELAY		
							RELAX			
4	REVILE	R		RE	REV	REVI	REVIL	REVILE		
5	FRIEND	E		ER	ERI				FRIEND	
		F		FR	FRI	FRIE	FRIEN	FRIEND		
6	ERA	E		ER	ERA	ERA				
		F		FR	ERB					
					FRA					
7	FRANK	E		ER	ERA			FRANK		
		F		FR	FRA	FRAN	FRANK			
					ERB					
8	FRAIL	E		ER	ERA			FRAIL		
		F		FR	FRA	ERBI				
					FRA	FRAI	FRAIL			
9	FRAIL	E		ER	ERA	ERBI	FRAIL			
		F		FR	ERB	FRAI	FRAIL			
					FRA					
10	ARID	A		AR	ARI	ARID	ARID			
		B		BR	BRI	BRID				

# FIG. 41

Dictionary file for Method II (Each letter is in ASCII code)

Col I	Col II
WS	CB
WSK	CAT
WSKID	CAUSE
WJO	COW
EJC	DOG
MJKID	HOUSE

# FIG. 42

Dictionary file for Method III

Column I	Column II
WS*	CB
WS*K*	CAT
WS*K**ID*	CAUSE
WJ*O	COW
EJ*C	DOG
MJ*K**ID*	HOUSE

# FIG. 43

Col I	Col II
QWERTY keyboard letters used in Col I of the dictionary which when redefined match the letter on the same line in Col II	
W	C
E	D
R	H
T	M
U	N
I	S
O	W
C	G
V	L
N	R
M	V
S*	A
S**	B
D*	E
D**	F
F*	I
F**	J
F***	K
J*	O
J**	P
J***	Q
K*	T
K**	U
L*	X
L**	Y
L***	Z

FIG. 44

Letters Entered	EF	R	IJK	E	N	D	
Display #	I	II	III	IV	V	VI	VII
	E	ER	ERI	ERIE	ERIEN	ERIEND	FRIEND
	F	FR	ERJ	EFJE	ERJEN	ERJEND	
			ERK	ERKE	ERKEN	ERKEND	
			FRI	ERIF	ERIFN	ERIFND	
			FRJ	ERJF	ERJFN	ERJFND	
			FRK	ERKF	ERKFN	ERKFND	
				FRIE	FRIEN	FRIEND	
				FRJE	FRJEN	FRJEND	
				FRKE	FRKEN	FRKEND	
				FRIF	FRIFN	FRIFND	
				FRJF	FRJFN	FRJEND	
				FRKF	FRKFN	FRRFND	

FIG. 45

DISPLAY #	1	2	3	4	5	6
			Method IV			
"desire" Homeline	d	De	Des	Desi Desi j Desi k	desir	desire
Method I with no selection key						
"desire" Homeline	d	De	Des	Desi	desir	desire
Method IV						
"fourth" Homeline	e f *	Fo Fp Fq	Fot fou *	Four	Fourt	fourth
Method I with no selection keys						
"fourth" Homeline	E F *	Eo Fo	Fou	Four	fourt	Fourth
Method IV						
"friend" Homeline	E F *	FR	Fri	Frie Frif	Frien	Friend
Method I with no select key <sub>2</sub>						
"friend" Homeline	E F *	ER FR	Eri Fri	Frie	Frien	Friend
Method I and Method IV						
"friend" Homeline	E F	FR	Fri	Frie	Frien	Friend



## FIG. 46

BASED ON KEYBOARD ASSIGNMENT SHOWN ON FIG. 48A  
AND FREQUENCY OF LETTER CHART — FIG. 47

Letters in Home Line	A	C	D	E	G	H	I	L	M	N	O	P	R	S	T	U	Y
Letters Below Home Line	B				F			J				V	Q	X		W	Z

The letters selected to be placed below home line and frequency of use in a sample of 1 million words.

Letter	Freq. of Use
B	1600 uses
F	2500 uses
J	400 uses
V	1200 uses
Q	400 uses
X	500 uses
W	1700 uses
Z	200 uses
TOTAL	8500 USER PER 106,400 USES = 8%

# FIG. 47

Frequency of use of letters for 15 categories of tests with over one million words

LETTERS	NUMBER OF USES
E	12,000
T	9,000
A	8,000
O	8,000
I	8,000
N	8,000
S	8,000
R	6,400
H	6,200
L	4,400
D	4,000
C	3,400
U	3,000
M	3,000
F	2,500
P	2,000
G	2,000
W	1,700
Y	1,700
B	1,600
V	1,200
K	800
X	500
J	400
Q	400
Z	200
Total	106,400 Uses

Based on A. Zettersten, 1969, p. 61, and Cambridge Ency. of Language, pg. 86.

FIG. 48a

FREQUENCY OF USE FOR FIRST LETTER IN A  
DICTIONARY OF 21,084 WORDS

First letter	Number of Words	Percentage
A	1353	6.4
B	1211	5.7
C	2137	10.1
D	1229	5.8
E	811	4.0
F	974	4.6
G	672	3.2
H	819	3.9
I	983	4.7
J	179	0.8
K	147	0.7
L	681	3.2
M	1133	5.4
N	441	2.1
O	509	2.4
P	1772	8.4
Q	109	0.5
R	941	4.5
S	2011	9.5
T	1079	5.1
U	606	2.9
V	459	2.2
W	697	3.3
X	10	0.0
Y	79	0.4
Z	42	0.2
Total	21,084.00 Words	100%

**FIG. 48b**

KEYBOARD ASSIGNMENT FOR CALCULATIONS ON FIGURES 46 AND 48A

Home line	A	C	D	E	G	H	I	K	L	M	N	O	P	R	S	T	W	Y	
Below home line	B			F			J					V	Q		X		U	Z	

FIG. 50

ESC	CTRL	F1 F6	F2 F7	F3 F8	F4 F9	F5 F10	ALT	PAUSE BREAK PRINT SCREEN	NUM LOCK
TAB	(	)	[	{ }			SCROLL LOCK	FN	BACK SPACE
C	D	H	M	*	N 7	S 8	W 9	—	
\	!	@	#	\$	%	^	&	*	SHIFT
AB	EF	IJK	*	*	OP 4	TU 5	XYZ 6	+	
SHIFT	G	/ ?	\	:	"	<	>	ENTER	CAP LOCK
DELETE	INSERT	HOME PAGE DOWN	SPACE BAR		PAGE UP			=	

# FIG. 51a

Keys 13

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	{ ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	:	ENTER
SHIFT	XYZ	TU	OP	IJK	CD	EF	B	N	M	<	>	?	SHIFT
	Z	X	V	C	QR	L							

# FIG. 51b

Keys 12

* TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	{ ]	← BACKSPACE
CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	:	ENTER
SHIFT	XYZ	VW	OPQ	IJK	CD	EF	B	N	M	<	>	?	SHIFT
	Z	X	C	RS	L								

# FIG. 51c

Keys 11

* TAB	Q XYZ	W OPQ	E GHI	R AB	T *	Y *	U .	I ..	O ...	P { }	← BACKSPACE	
CAPS LOCK	A VW	S RS	D JKL	F CD	G *	H *	J ..	K ..	L :	:	"	ENTER
	....	...	...	...	..	..	..	..	..	..	;	
SHIFT	Z	X	C	V	MN	EF	B *	N .	M <	>	?	SHIFT
	....	TU	...	...	..	..	..	..	..	.	/	

# FIG. 51d

Keys 10

* TAB	Q XYZ	W OPQ	E GHI	R AB	T *	Y *	U .	I ..	O ...	P { }	← BACKSPACE	
CAPS LOCK	A VW	S RS	D JKL	F CD	G *	H *	J ..	K ..	L :	:	"	ENTER
	....	...	...	...	..	..	..	..	..	..	;	
SHIFT	Z	X	C	V	MN	OPQ	B *	N .	M <	>	?	SHIFT
	....	TU	...	...	..	..	..	..	..	.	/	

# FIG. 51e

Keys 9

* TAB	Q ....	W SYZ ...	E JKL ..	R BC .	T * .	Y * .	U .	I ..	O ...	P { } [ ]	← BACKSPACE
CAPS LOCK	A VW ....	S TUX ...	D MNO ..	F DEF ⊙	G * .	H * .	J ..	K ..	L : :	" ,"	ENTER ↵
⇧ SHIFT	Z ....	X ...	C PQR ...	V GHI .	B * .	N ..	M < ,	> .	? /	⇧ SHIFT	⋮ \

# FIG. 52a

14 Keys

* TAB	Q GH ....	W EF ...	E D ..	R CX .	T AB .	Y * .	U * .	I ..	O ...	P { } [ ]	← BACKSPACE
CAPS LOCK	A OP ....	S M ...	D N ..	F LY ⊙	G IJK .	H * .	J ..	K ..	L : :	" ,"	ENTER ↵
⇧ SHIFT	Z ....	X VW ...	C TU ..	V S .	B QR .	N * .	M * ..	< ,	> .	? /	⇧ SHIFT

# FIG. 52b

13 Keys

* TAB .	Q GH ....	W EF ....	E D ....	R CX ..	T AB .	Y * .	U * .	I ..	O ....	P { [ ]	← BACKSPACE
CAPS LOCK	A VW ....	S OP ....	D MN ....	F LY ..	G IJK .	H * .	J ..	K ..	L : ;	" ,"	ENTER ↵
⇧ SHIFT	Z ....	X TU ....	C SZ ...	V QR ..	B * .	N * .	M < ,	> .	? /	⇧ SHIFT	! \

# FIG. 52c

12 Keys

* TAB .	Q GHI ....	W EFG ..	E CD ..	R AB .	T * .	Y * .	U * .	I ..	O ....	P { [ ]	← BACKSPACE
CAPS LOCK	A S ....	D OP ....	F MN ..	G JKL .	H * .	J ..	K ..	L : ;	" ,"	ENTER ↵	
⇧ SHIFT	Z ....	X XYZ ....	C VW ...	V TU ..	B * .	N * .	M ..	< ,	> .	? /	⇧ SHIFT ! /



## 11 Keys

* TAB	Q	W	E	R	T	Y	U	I	O	P	}	}	← BACKSPACE
·	....	...	EFV	CD	AB	*	*	...	...	....	[	]	
CAPS LOCK		A	S	D	F	G	H	J	K	L	:	"	
	RX	OPQ	MN	JKL	GHI	*	*	..	..	...	:	,	ENTER ↵
		Z	X	C	V	B	N	M	<	>	?	/	
SHIFT		....	WY	TU	S	*	..	..	.	.		SHIFT	↵

## 10 Keys

* TAB	Q ....	W ... EFV	E CDX ..	R AB .	T Y *	U . .	I .. .	O ... P	{ } [ ]	↩ BACKSPACE
CAPS LOCK	A RS ....	S OPQ ....	D MN ...	F JKL ..	G GHI ⊙	H .* .	J .* .	K ... L	" , :	ENTER ↵
⇧ SHIFT	Z ....	X ....	C WYZ ...	V TU ..	B .* .	N .* .	M .. .	< > ,	? /	⇧ SHIFT

FIG. 53  
12 KEYS

## 12 KEYS

[illegible]



ᠳᠤᠰᠤᠨ ᠤᠯᠤᠰ

## 16 KEYS

[illegible][illegible]

## 17 KEYS

[illegible]

## 12 KEYS

[illegible]

## 17 KEYS

[illegible]

**FIG. 57a**

15 KEYS

AB	EF	IJK	NO	TM
C	g	LY	PQ	SZ
d	h	M	RX	VW
*	*	*	*	*

**FIG. 57b**

15 KEYS

AB	EF	IJK	OP	TU
C	G ⊙	L	QR	VW
D	H	MN	S	XYZ
*	*	*	*	*

**FIG. 57c**

12 KEYS

*	*	*	*	*
AB	EF	IJK	MN	RS
CD	GH ⊙	L	OPQ	TU
*	VW	XYZ	*	*

**FIG. 57d**

15 KEYS

AB	CY	D	NB	PQ
EF	G	HX	R	SZ
IJK	L	M	TU	VW
*	*	*	*	*

**FIG. 57e**

15 KEYS

C	G	LY	N	SZ
ab	ef	IJK	OPQ	TY
d	H	M	RX	VW
*	*	*	*	*

9 KEYS

		*	ABC	DEF	GHI	JKL	
		*	MNO ⊙	PQR	SYZ	TUX	
			VW	*	*	*	

15 KEYS

					*	AB	CY	D	EF	
					VW	GH ⊖	IJK	LX	MZ	
					*	N	OPQ	RS	TU	
						*	*	*	*	

12 KEYS

[illegible]

**FIG. 58d**

10 KEYS

		ABC	DEF	GHI
	*	JKL	MN	OPQ
	*	RS	TU	VW
		*	XYZ	*

**FIG. 58e**

9 KEYS

	ABC	JKL	SYZ	
	DEF	MNO	TUX	*
	GHI	PQR	VW	*
	*	*	*	

**FIG. 58f**

10 KEYS

ABC	JKL	RS	
DEF	MN	TU	*
GHI	OPQ	VW	*
*	XYZ	*	

**FIG. 58g**

16 KEYS

AB	EF	L	OP	TU
CY	GH ⊙	M	QR	V
D	IJK	N	S	W
*	*	XYZ	*	*

**FIG. 58h**

10 KEYS

ABC	GHI	MNO	S	VW
DEF	JKL ⊙	PQR	TU	XYZ
*	*	*	*	*



FIG. 59a

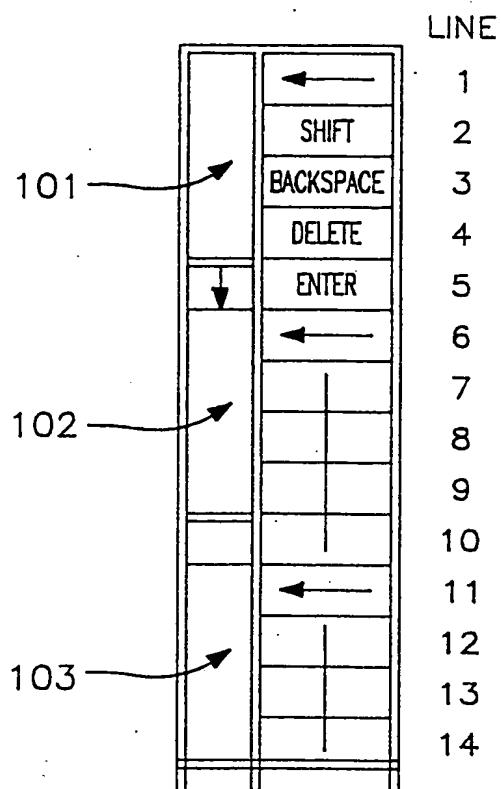


FIG. 59b

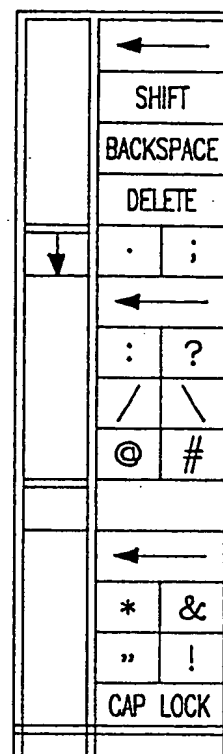


FIG. 59c

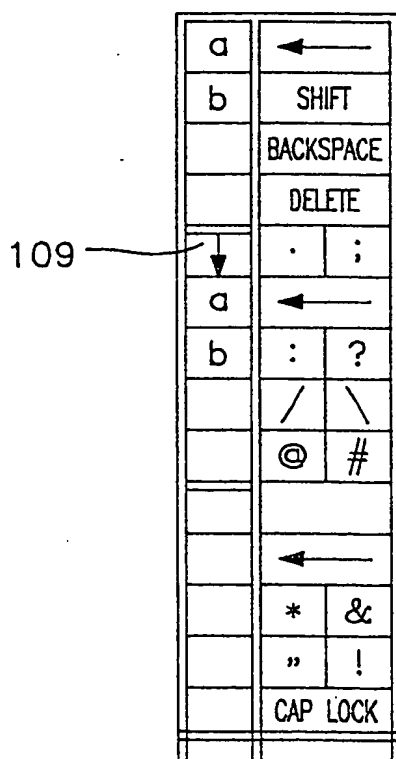


FIG. 59d

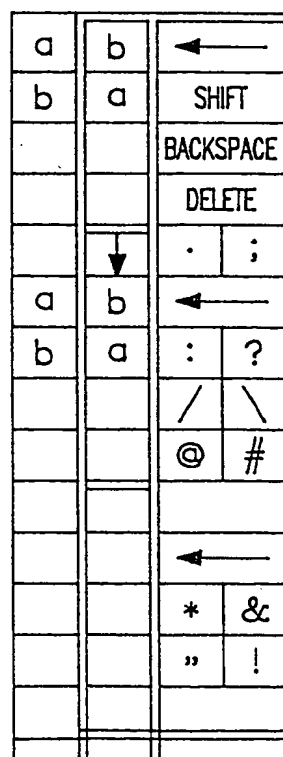


FIG. 59e

a	b		←
a	b	y	SHIFT
			BACKSPACE
			DELETE
		↓	·   ;
a	b		←
b	a	y	:   ?
			/   \
			@   #
			←
			*   &
			"   !

FIG. 59f

col #	1	2	3	4	LINE #	
	a	b	L	e	1	105
					2	
					3	
					4	
					5	
	a	b	l	e	6	106
	b	a	y	f	7	
					8	
					9	
					10	
					11	107
					12	
					13	
					14	
						108

# FIG. 60a

The man is

a	←	LINE #	1
b			2
			3
			4
↓			5
a	←		6
b			7

# FIG. 60b

The man is

a	a	←	LINE #	1
a	b			2
b	a			3
b	b			4
	↓			5
a	a	←		6
b	b			7

# FIG. 60c

The man is

b	a	Y	←	LINE #	1
a	b	L			2
a	b	Y			3
b	a	L			4
		↓			5
b	a	Y	←		6
a	b	L			7

# FIG. 60d

col #	1	2	3	4		LINE #
The man is	a	b	I	E	←	1
	b	a	I	E		2
						3
						4
				↓		5
	a	b	I	E	←	6
	b	a	y	E		7

# FIG. 60e

104 →

The man is able		←	LINE #
			1
			2
			3
			4
	↓		5
		←	6
			7



FIG. 61c

[illegible]

\* RIGHT HAND

**FIG. 61d**

[illegible]

\* LEFT HAND

FIG. 61e

[illegible]

\* RIGHT OR LEFT HAND

\* DENOTES LOCATION  
OF FUNCTION KEYS  
SELECT KEY #1  
ARROW KEY  
SCROLL KEY #1  
SCROLL KEY #2  
S/D MODE KEY

Figure 62

Keyboard  
Assignment

Number of unintended  
words displayed when  
entering intended words  
which result from the  
letter assignments  
in the left column

AB	23
CK	13
DJ	39
EF	12
GI	7
HO	30
LY	27
MX	6
NZ	12
PQ	0
R	0
S	0
TU	8
VW	24

Total: 201       $201 \div 41,790 = .5\%$



[illegible]

100

[illegible]

002  
↖

[illegible]

1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50		51		52		53		54		55		56		57		58		59		60		61		62		63		64		65		66		67		68		69		70		71		72		73		74		75		76		77		78		79		80		81		82		83		84		85		86		87		88		89		90		91		92		93		94		95		96		97		98		99		100	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																																																																																																																																																																																	

004 ↑

67

FIG

1	2	3	4	5	6	7	8	9	WRD	ARW	LTR	BKS	LY	MX	NZ	PAD
													AB	CK	DJ	
													EF	GI	HO	TU
													PQ	R	S	ENT
													MIN MAX			
													.005			
													SPACE BAR			
													SVC			
													VW			

005



[illegible]

007

FIG 70

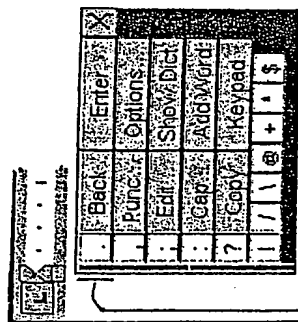










FIG 74

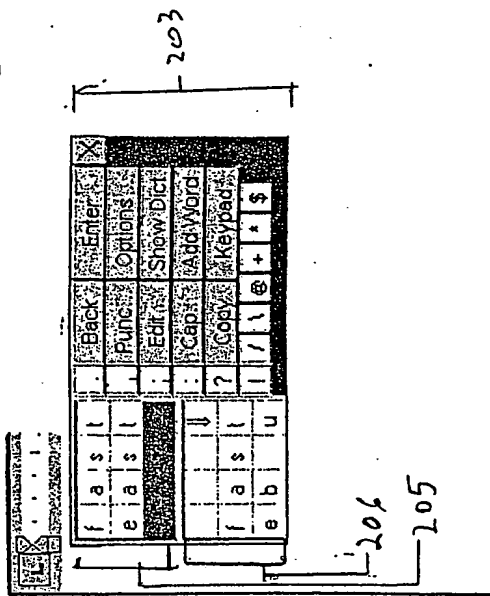


FIG 75A

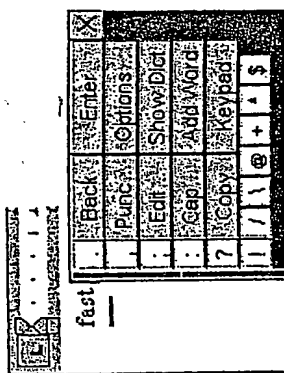
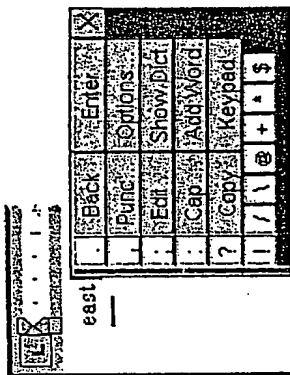


FIG 75 B



11



FIG 77

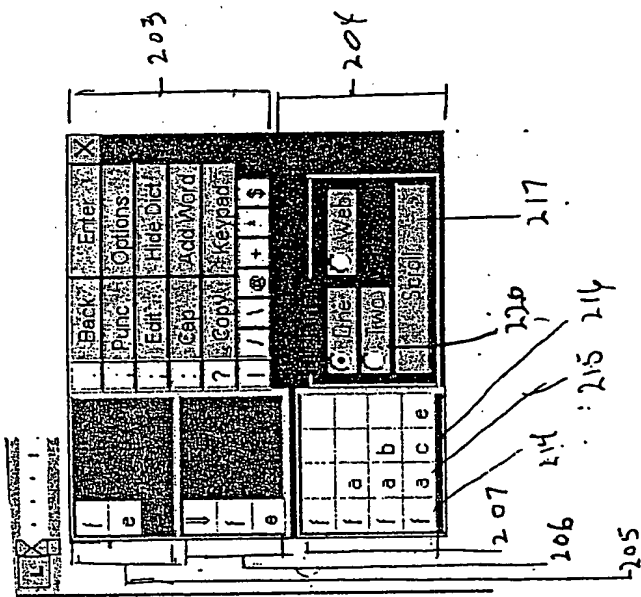




Fig 78

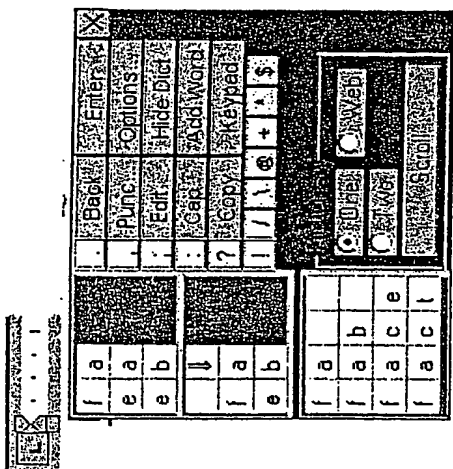


FIG 79

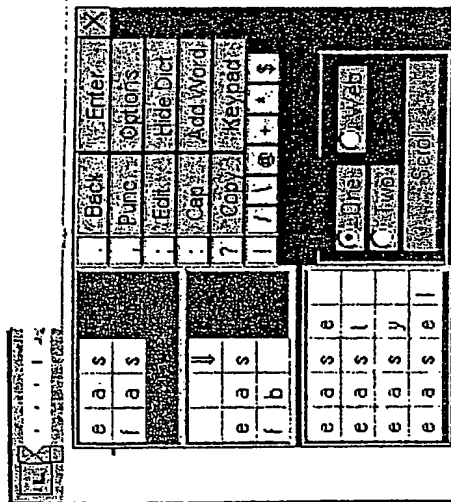


FIG 80

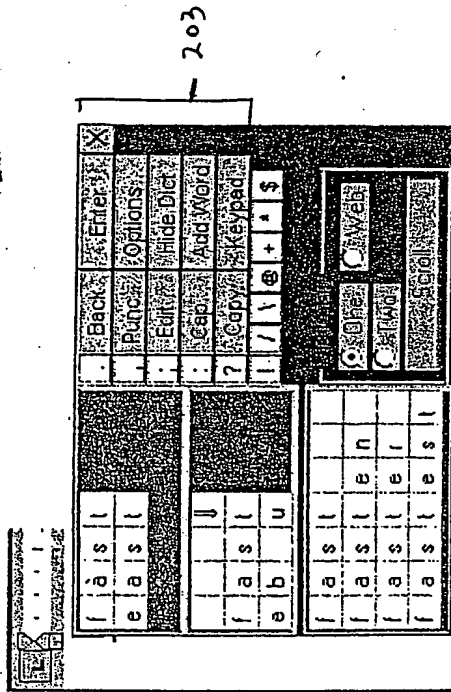
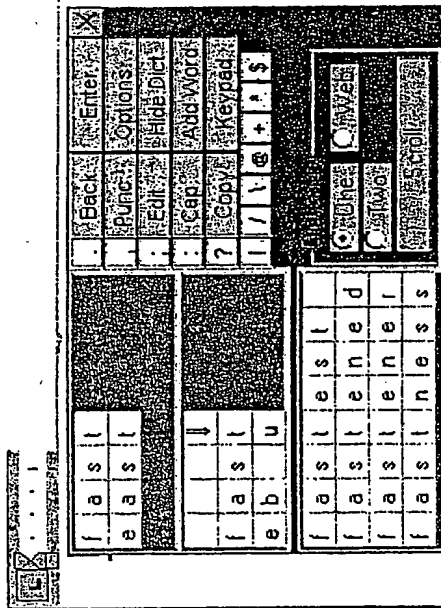


Fig 21



F1482

F1482									
f	a	s	t						
e	a	s	t						
↓									
f	a	s	t						
e	b		u						
f	a	s	t	n	e	s	s		
f	a	s	t	e	n	i	n	g	
f	a	s	t	i	d	i	o	u	s
f	a	s	t	i	d	i	o	u	s
									y
Back Enter									
Punc Options									
Edit Hide Dic									
Cap Add Word									
? Copy Keybed									
/ \ @ + * \$									
Done Cancel									
OK Cancel									

FIG 83

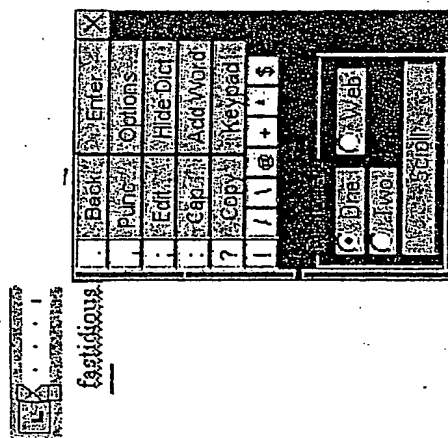


FIG 84

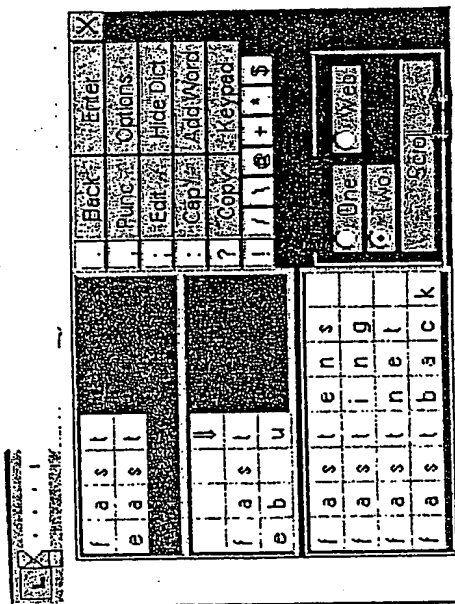


FIG 85

f a s t		Back		Enter	
e a s t		Punc		Option	
		Edit		Slide P	
		Cap		Add W	
f a s t		?		Copy	
e b u		/ \ @ + *			
f a s t b a c k					
f a s t e n e r s					
f a s t i g i a t e					
f a s t i d f i o u s n e s s					



— + . .

e	b	.	Back	Enter	X
f	b	.	Print	Options...	
f	a	.	Edit	Show Dict	
		:	Cap	Auto Word	
		?	Copy	Clipboard	
			/	@	+
				*	\$

FIG 87

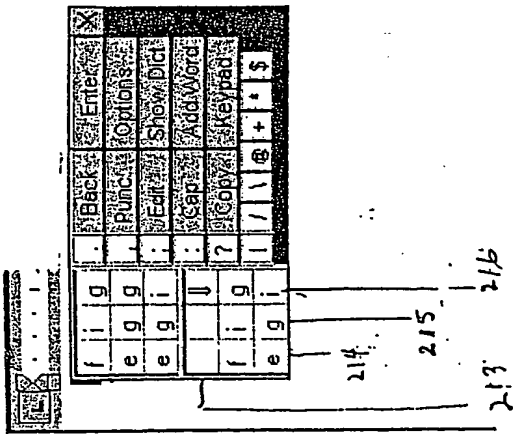
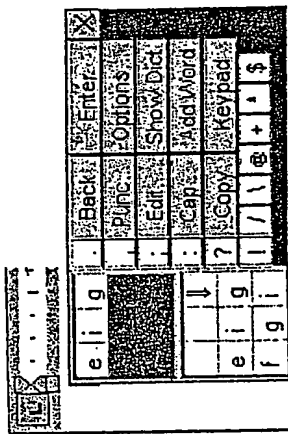


FIG 88



10

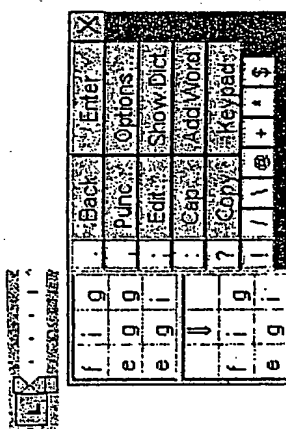


Fig 90

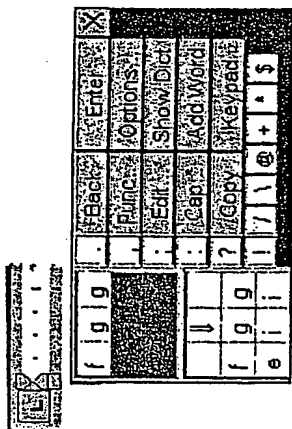


Fig 91

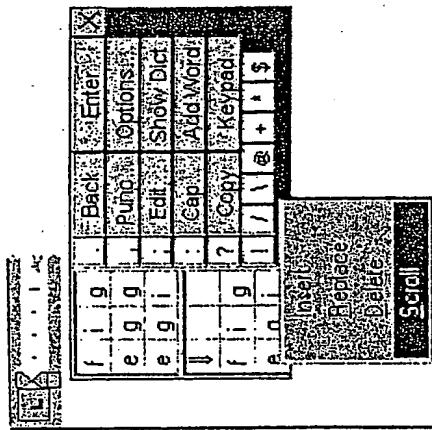
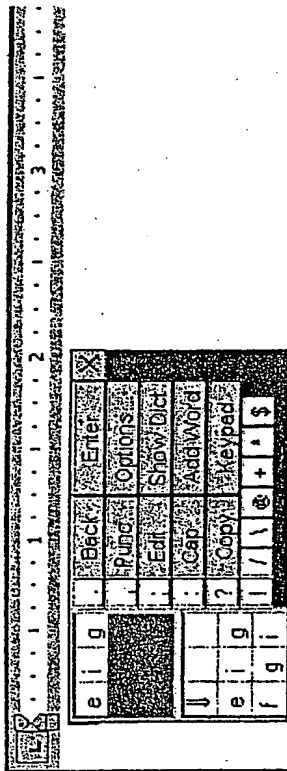


Fig. 92



F1493

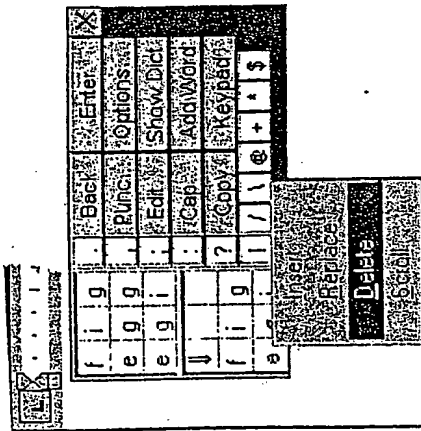




Fig. 94

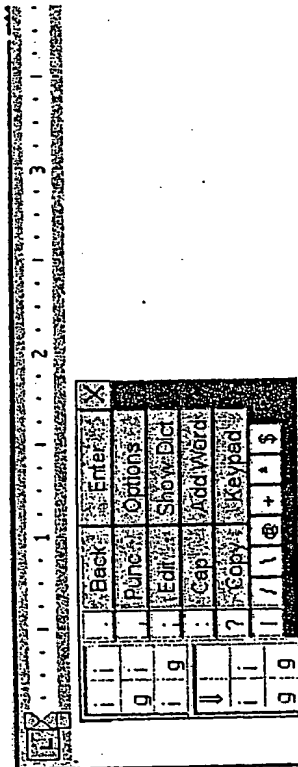


FIG 95

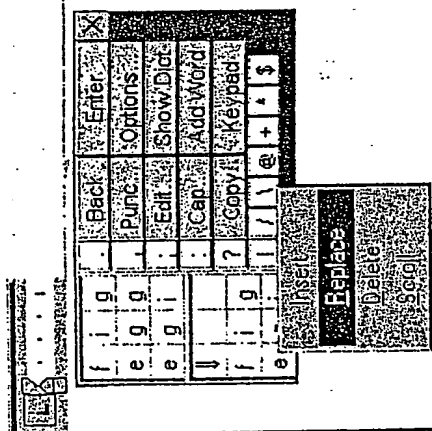
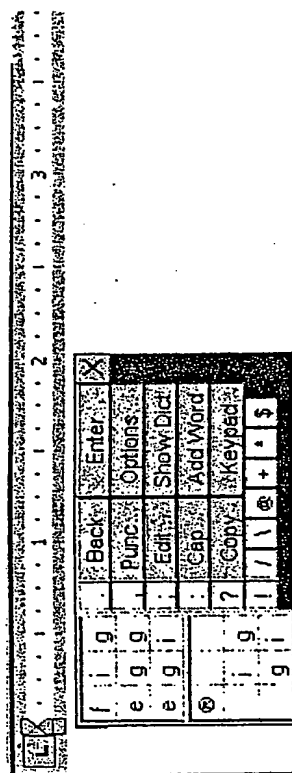


Fig. 9b



214 215 216

Fig 97

b i g	a g g	a g i	↑ ↓	? Copy	Options
a g g	a g i			/? Copy	Show Dict
				/? Copy	Add Word
b i g	a g i			/? Copy	Keypad
a g i				/? Copy	Keypad

F-998

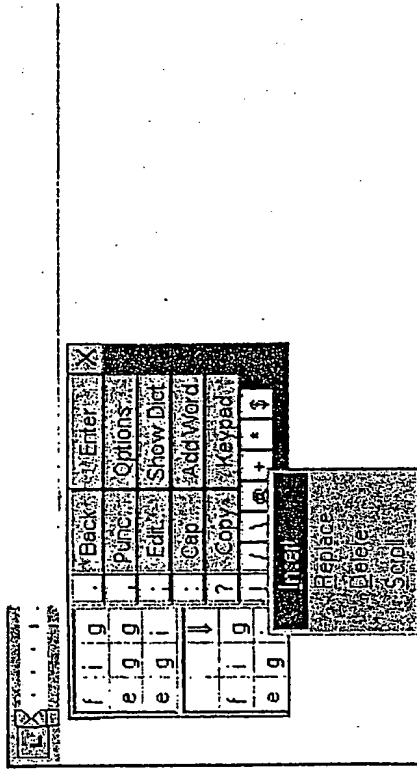
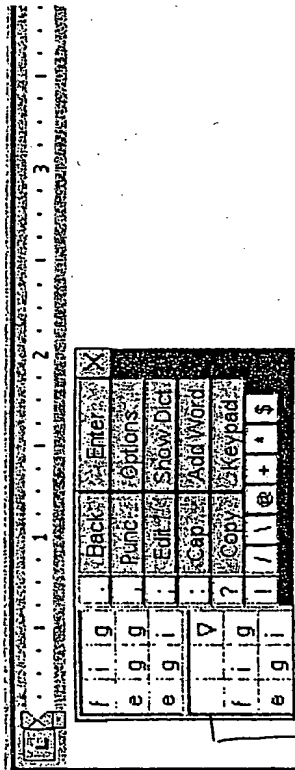


Fig. 99



[illegible]

21





11





11

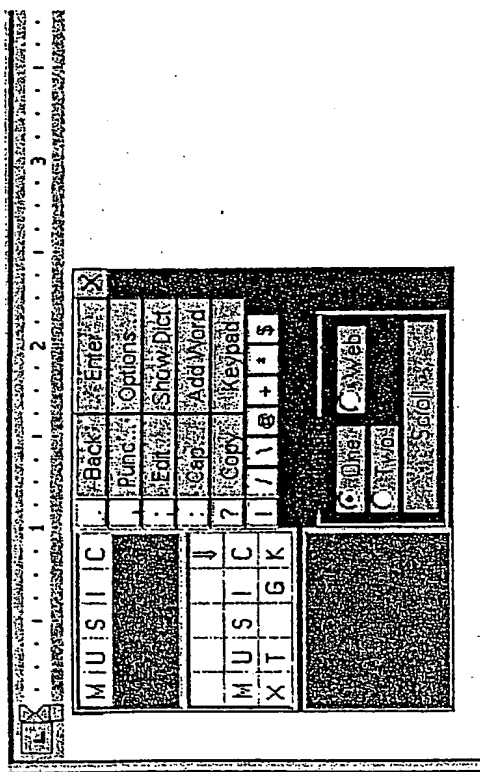
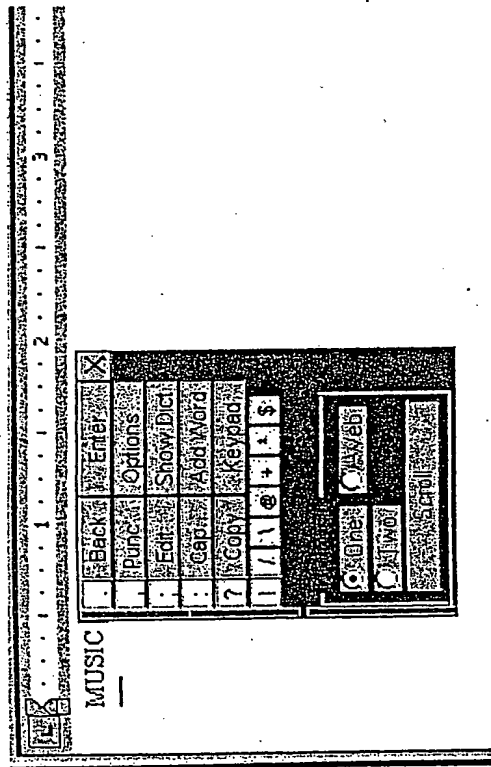


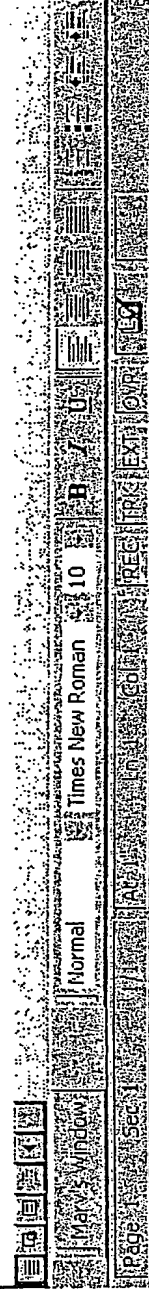
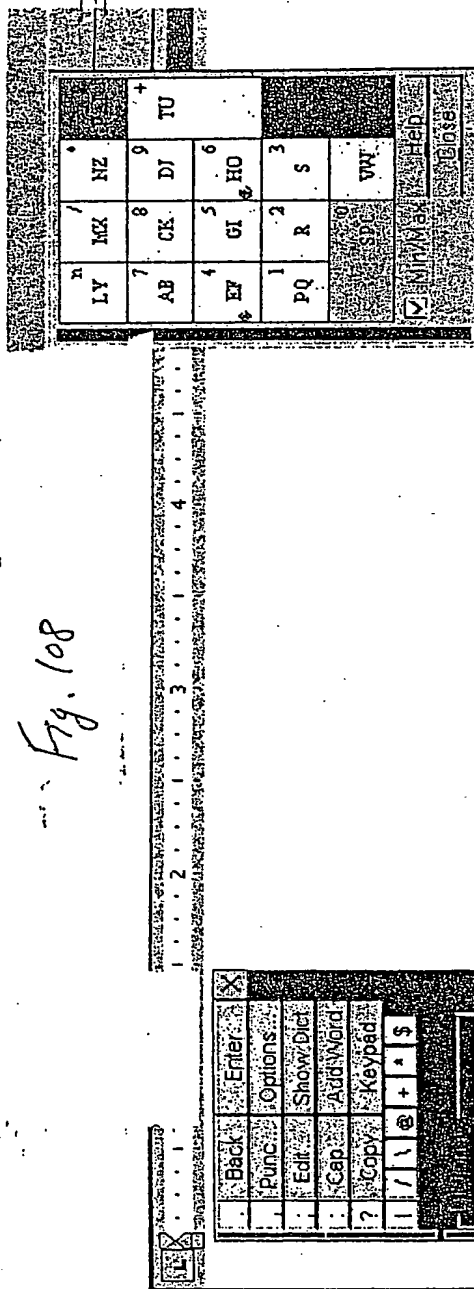
Fig. 105





A large, dark, textured rectangular area, possibly a scan artifact or a placeholder for a large image. It occupies the central portion of the page and has a grainy, noisy appearance.

Fig. 108

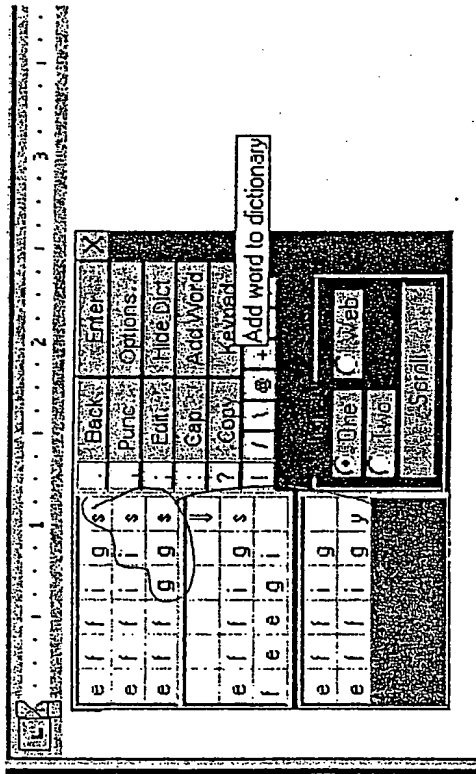


4





Fig. 110



The image shows a simulated computer terminal window with a text editor interface. The window has a title bar with a close button (X) and a menu bar with 'File', 'Edit', and 'Format'. The text area contains a document titled 'SECRET' with a large 'X' over it. The status bar at the bottom shows 'Line 1 of 1' and 'Column 1 of 1'. The terminal window is surrounded by a grid of function keys (F1-F12) and a numeric keypad.

Fig 11v

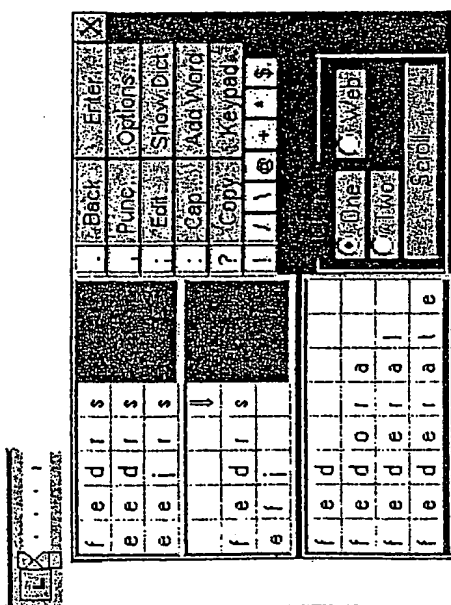


FIG 17

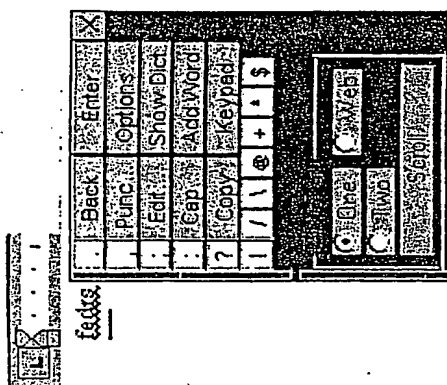


Fig 114

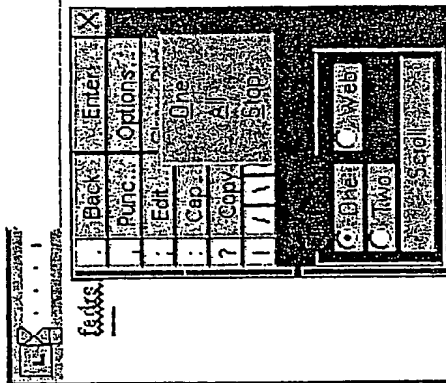


Fig. 115

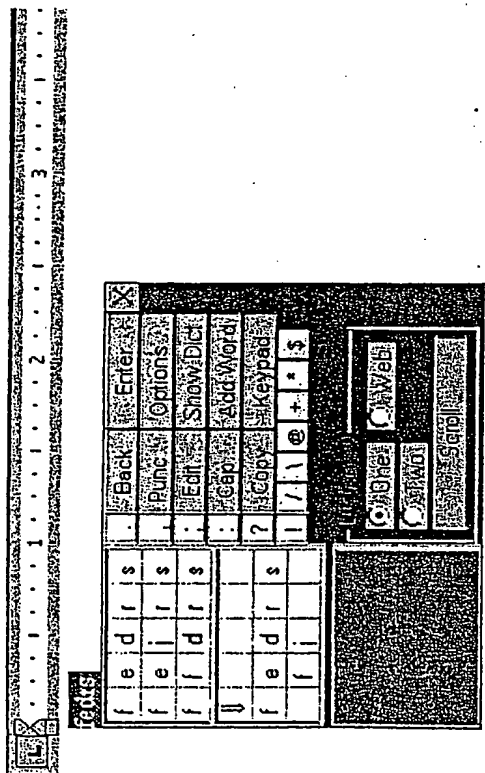


Fig 11b

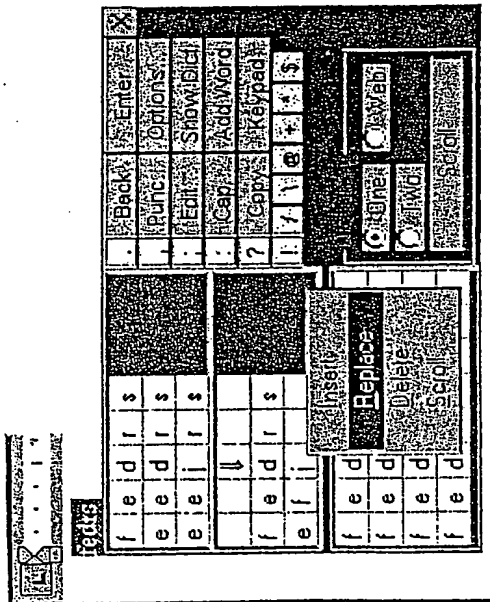


Fig. 117

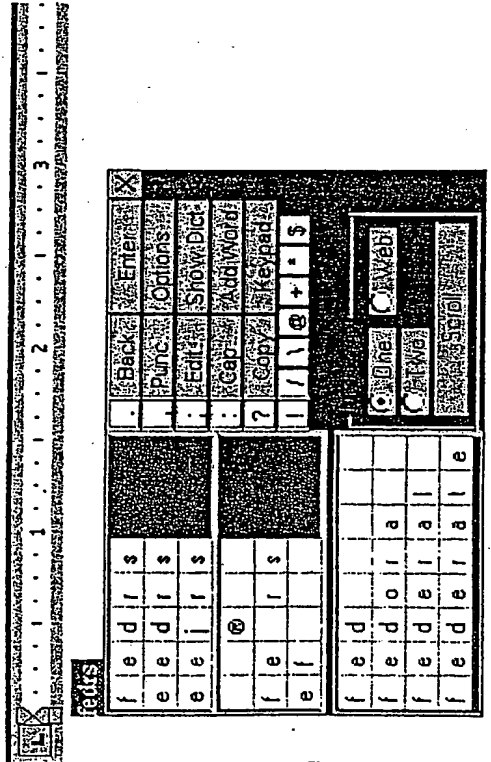
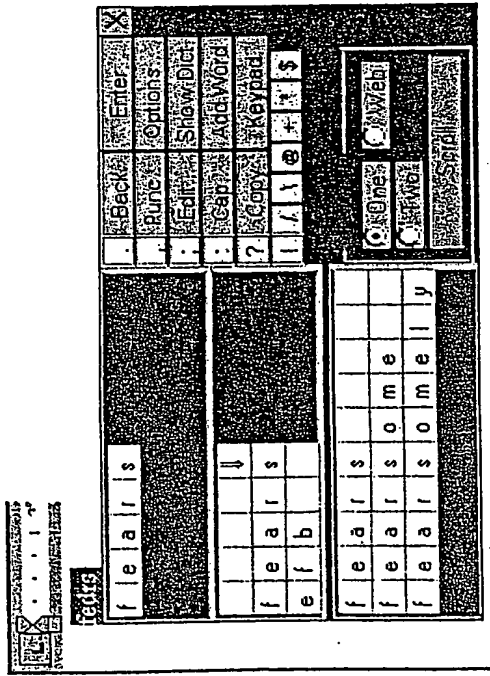




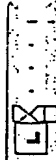
FIG 118



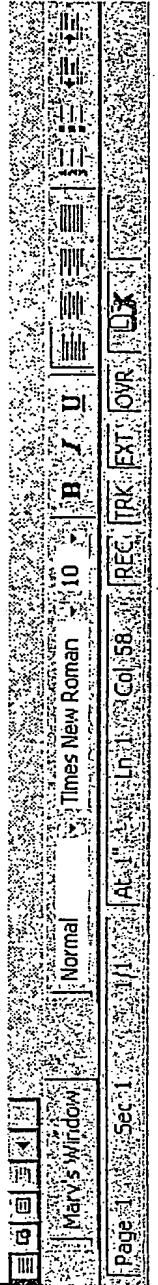
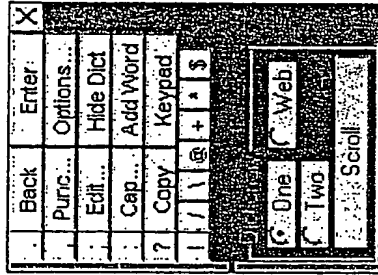
FL9 119

FL9 119											
fears											
Back Enter											
Punc Options											
Feat Show Del											
Capl Add Word											
? Copy Key Pad											
1 / 1 0 + A \$											
CHG 16 CHG 20											
CHG 20 CHG 20											

Fig 120



It is a new nation conceived in liberty and dedicated to



F19 121



It is a new nation conceived in liberty and dedicated to

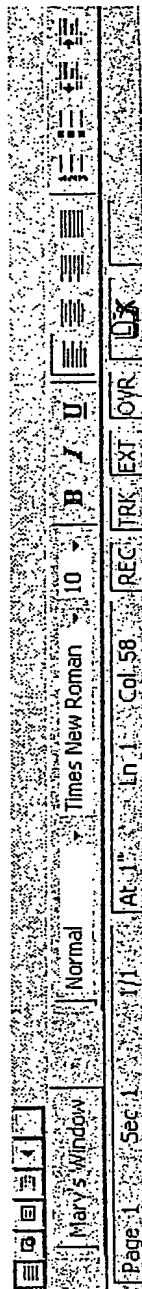
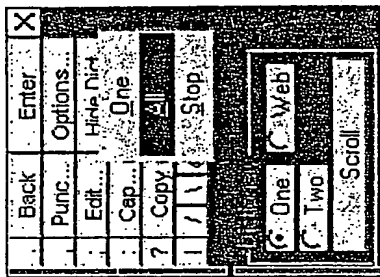


Fig. 122

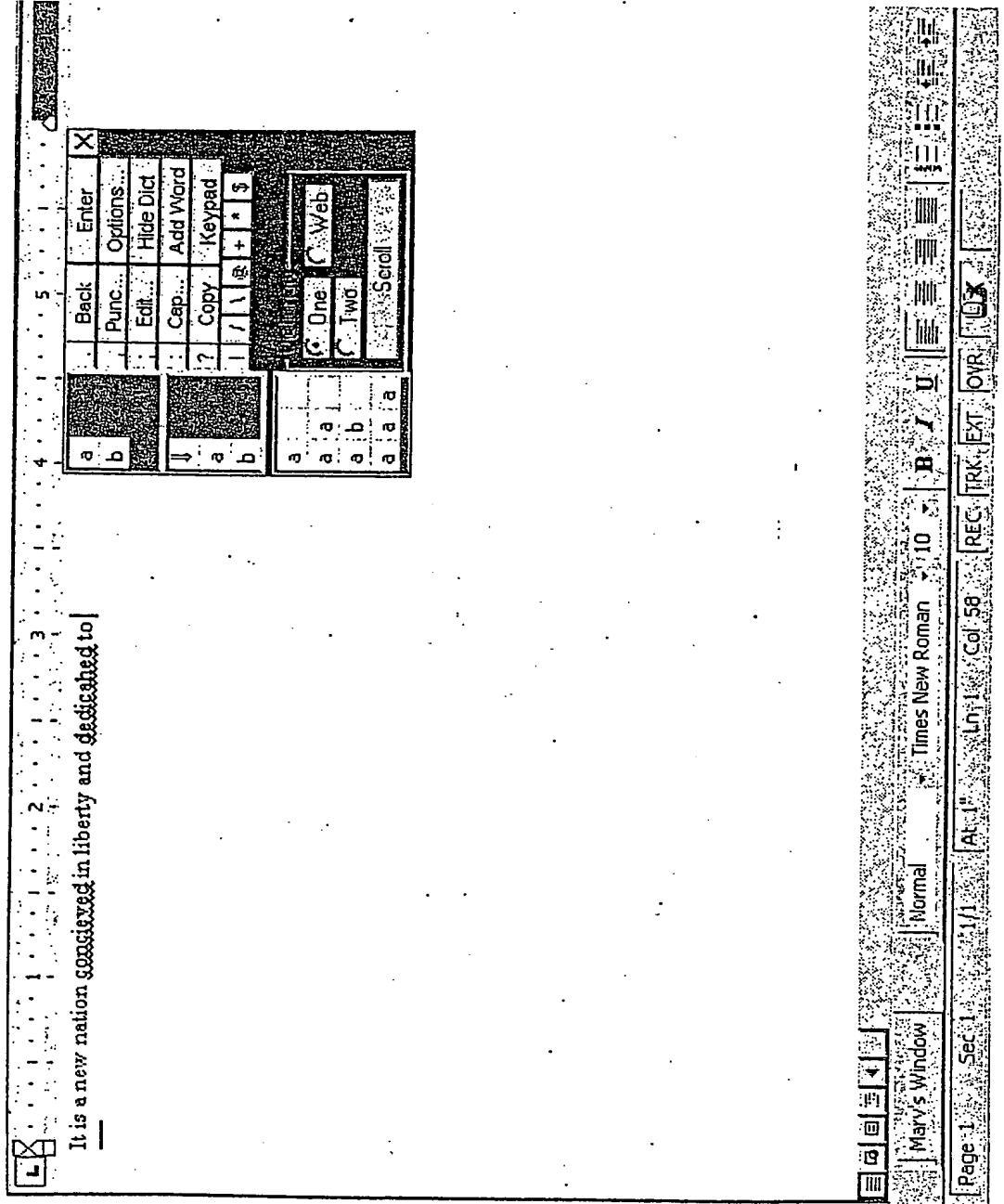
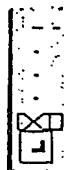


Fig 123



It is a new nation governed in liberty and justice

c	o	n	c	e	v	e	d	Back	Enter	X
c	o	n	c	e	v	e	d	Punc...	Options...	
c	o	n	c	e	v	e	d	Edit...	Hide Dict	
								Cap...	Add Word	
c	o	n	c	e	v	e	d	Copy	Keypad	
k	h	z	k	g	f	w	f	1	2	3
c	o	n	c	e	v	e	d	<input type="button" value="One"/> <input type="button" value="Two"/> <input type="button" value="Scroll"/>		

<input type="button" value="File"/> <input type="button" value="Edit"/> <input type="button" value="Format"/> <input type="button" value="Window"/> <input type="button" value="Help"/>		Normal	Times New Roman	10	B	I	U	<input type="button" value="Align Left"/> <input type="button" value="Align Center"/> <input type="button" value="Align Right"/> <input type="button" value="Justify"/>	
Page 1	Sec 1	At 1	Ln 1	Col 59	REC	TRK	EXT	OVR	<input type="button" value="Undo"/>

F19 124



It is a new nation conceived in liberty and dedicated to

Context menu with options: Enter, Punc..., Edit..., Cap..., Copy, Paste, One, Two, Scroll.

Page 1, Sec 1, Marv's Window, Normal, Times New Roman, 10, B, I, U, REC, TRX, EXT, OVR, LIX, Ln: 1, Col: 59.

Fig 125



It is a new nation conceived and dedicated to

d e d i c a h e d	Back	Enter	X
d e d i c a h e d	Punc...	Options...	
d e d i c a h e d	Edt...	Hide Dict	
	Cap...	Add Word	
d e d i c a h e d	? Copy	Key pad	
f i g k b o f i	/ \ @ + * \$		
d e d i c a t e	One	Web	
d e d i c a t e	Two		
d e d i c a t o r			
d e d i c a t i o n			

Page 1	Sec 1	1/1	At 1	Col 29	REC	TRK	EXT	OWR	UX
Mary's Window									
Normal									
Times New Roman									
B I U									



[illegible]

FIG 127

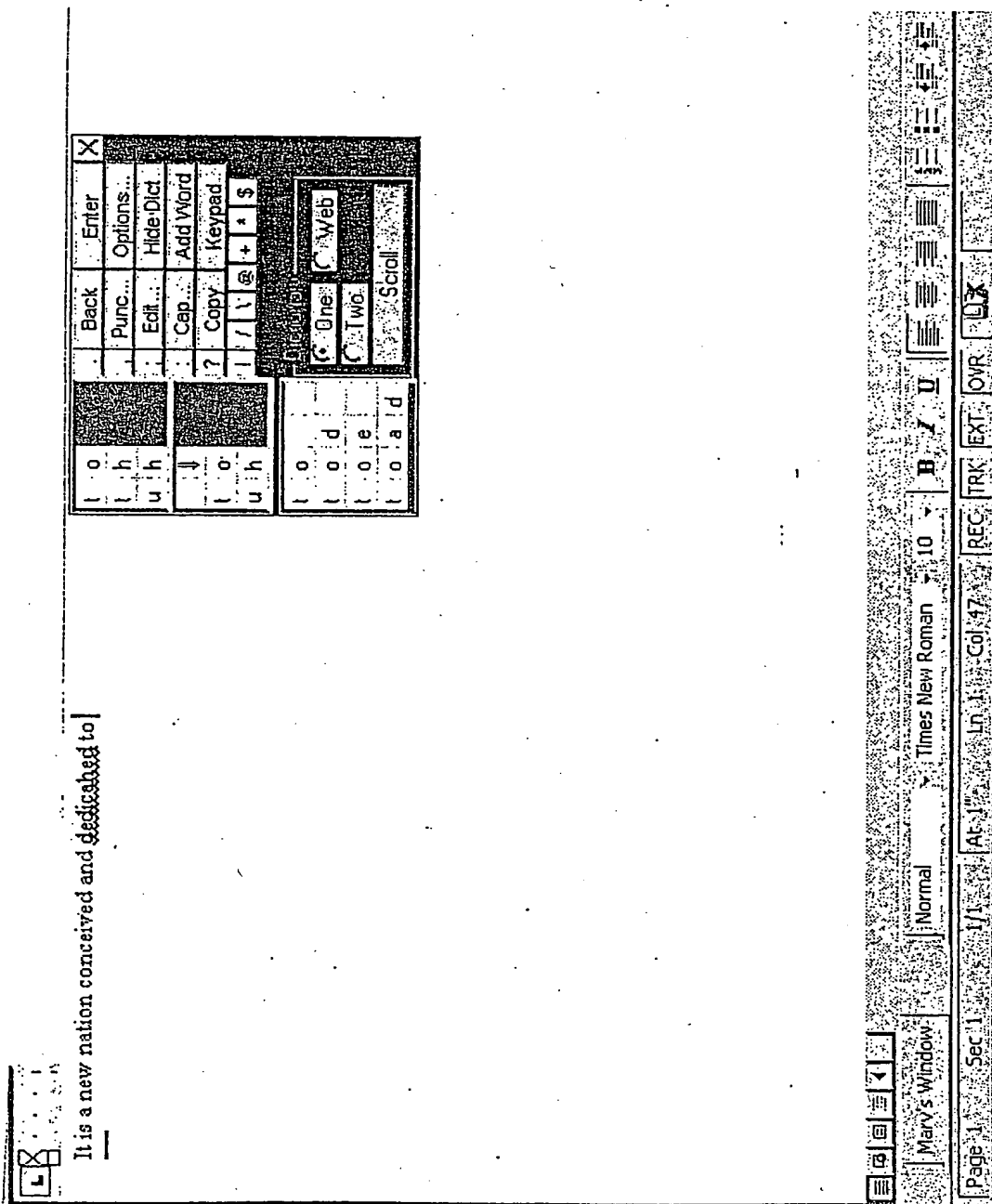
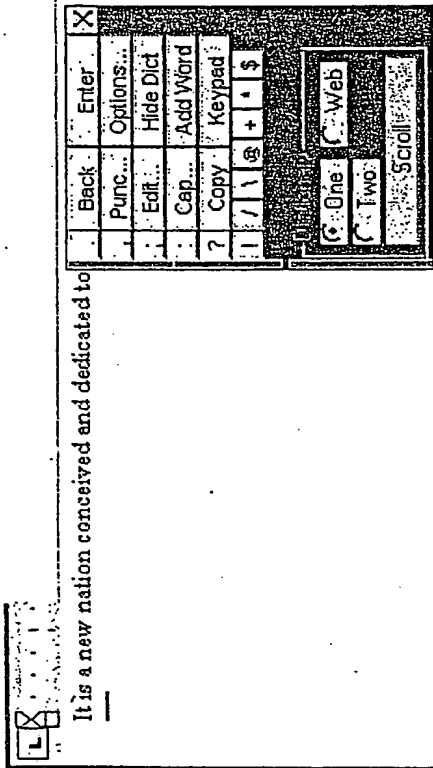
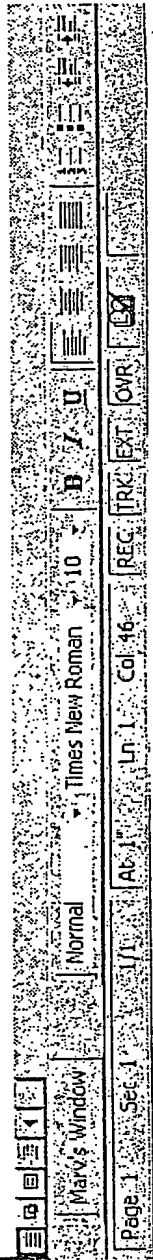


FIG 128



It is a new nation conceived and dedicated to



129  
11/12

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490</
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	--------

Fig. 130

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

how

BackEnter

Punc...Options

Edit...Hide Dict

Cap...Add Word

Copy...Keypad

1/1 @ + \* \$

One C Web

Two

Scroll

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

QqWwEeRrTtYyUuIiOoPp

AaSsDdFfGgHhJjKkLl

ZzxXcVvBbnNm

HelpClose

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

LYMXNZ

ABCKDJ

ETGHIHO

PQRST

SPC

VW

998

998

Normal

Times New Roman

10

B

U

REC

TRK

EXT

OVR

Page 1

Sec 1

At 1.1

Ln 2

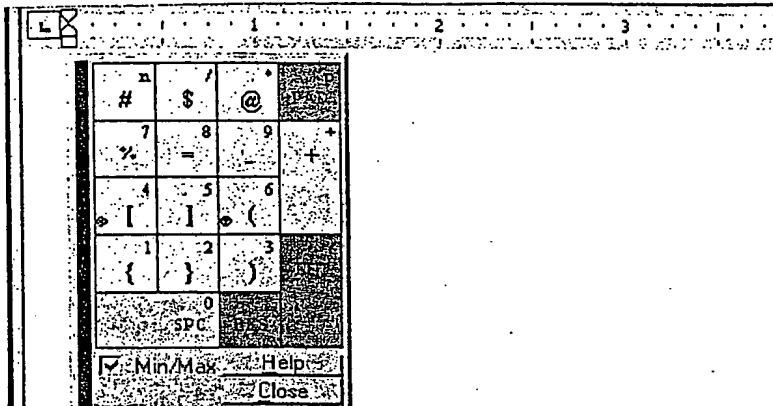
Col 6

Fig. 131

ARW	LTR					
4	5	6				"
?	1	2	3			
0	SPC	BKS				
<input checked="" type="checkbox"/> Min/Max <input type="checkbox"/> Help <input type="button" value="Close"/>						

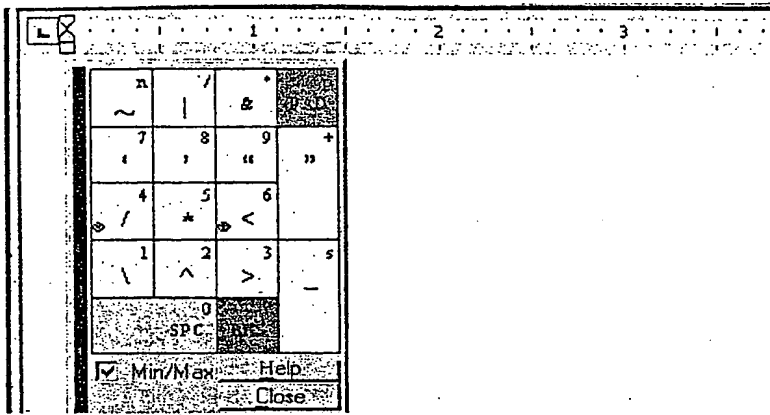
009 ↑

Fig. 132



0010 ↑

- fig. 133



0011



Fig. 134

ARW	LTR		
7	8	9	+
7	8	9	+
4	5	6	
4	5	6	
1	2	3	
1	2	3	
	0		
	0		

☒ Min/Max    ☐ Help   

0012↑

Fig

135

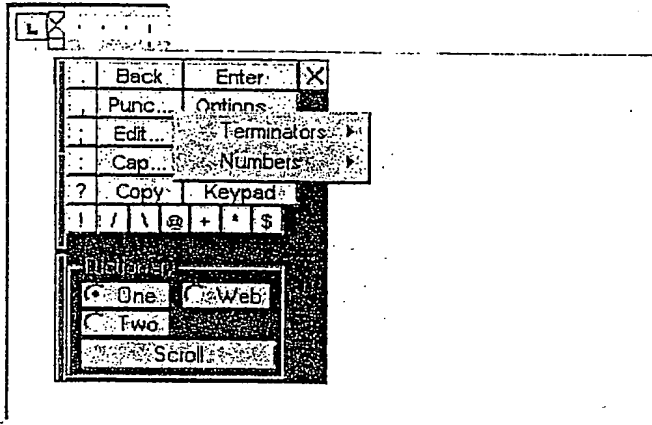


Fig. 136

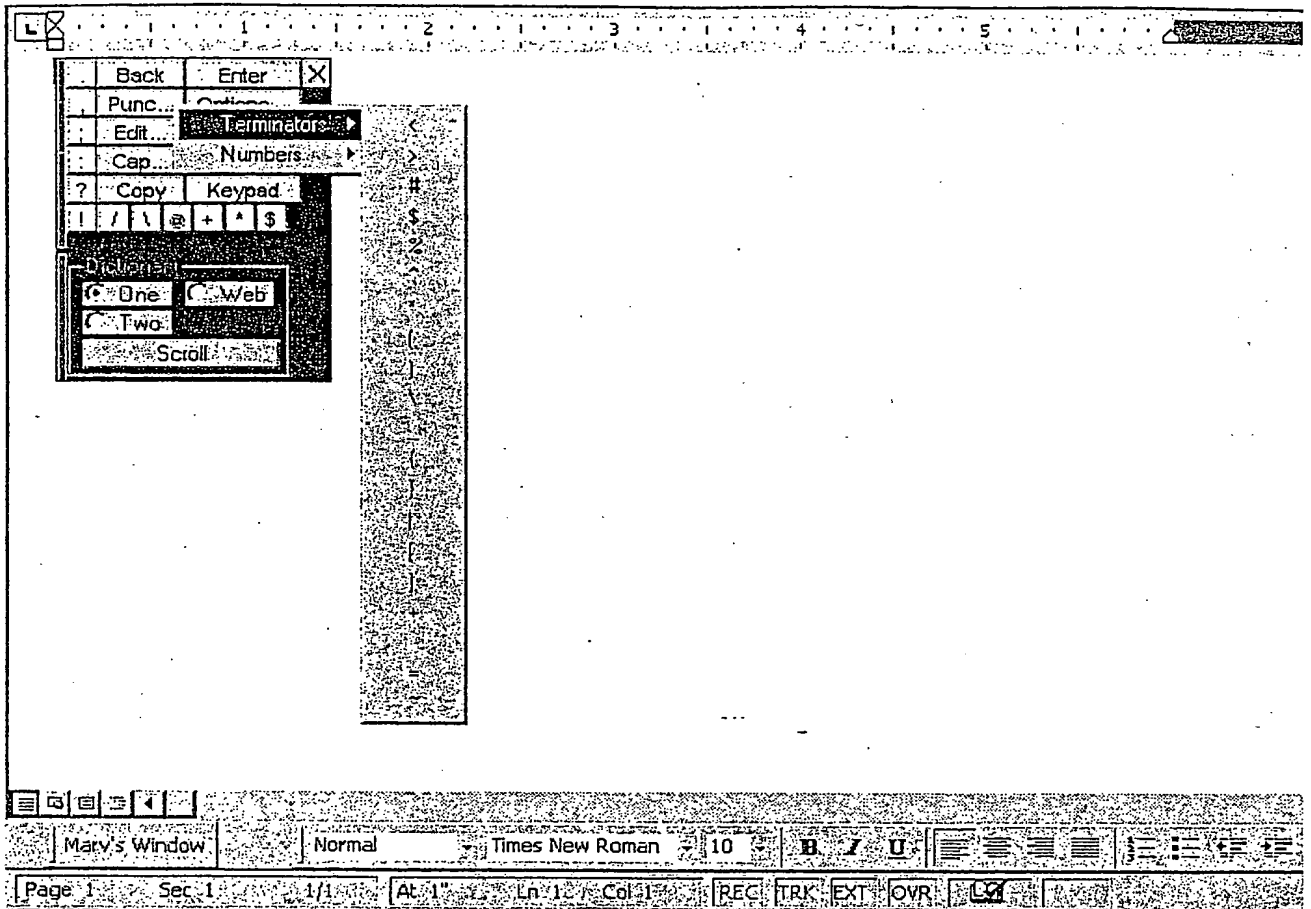
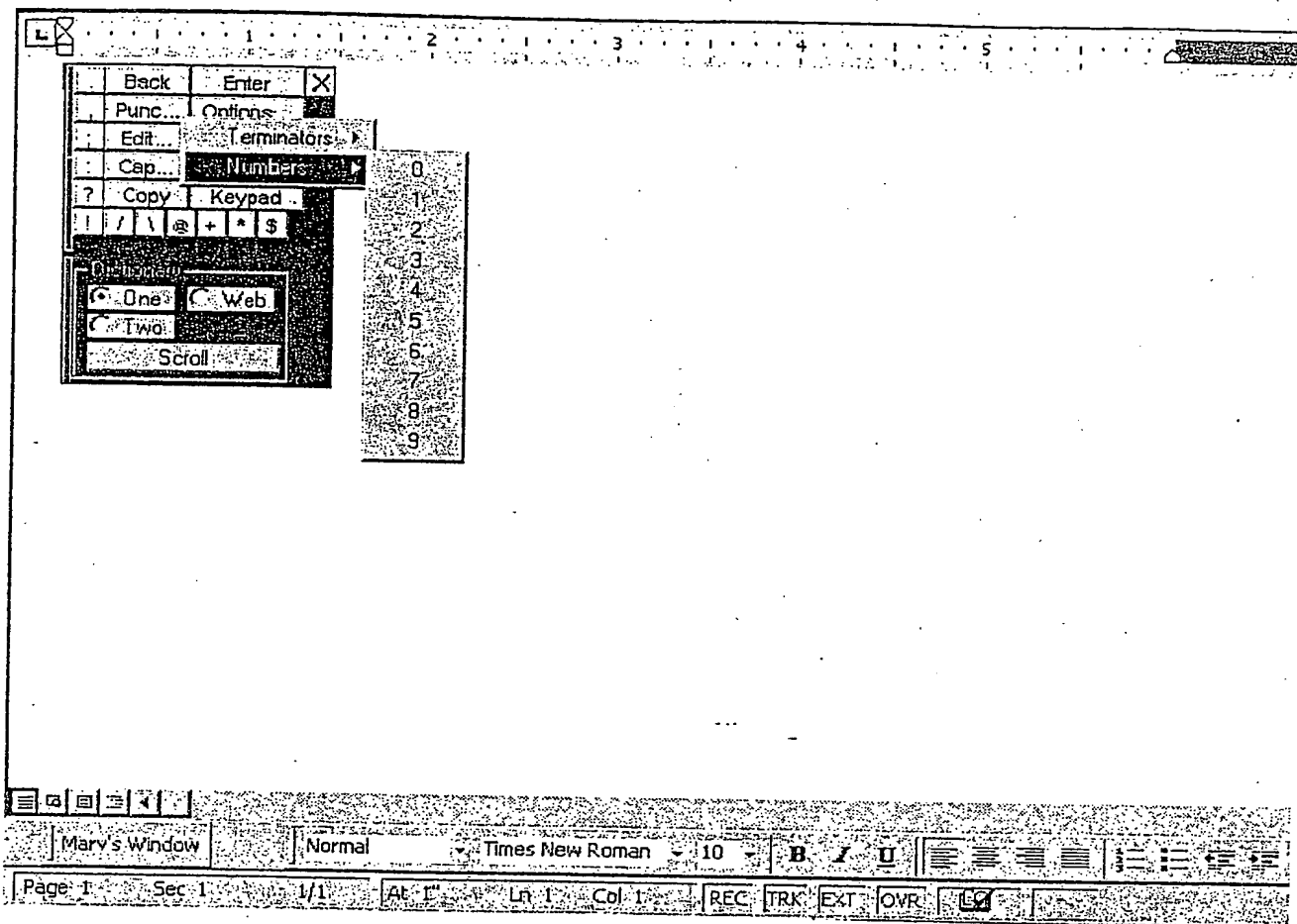


Fig. 137



001B

L	X
3	9
ARW	LTR
I	O
P	J
K	L
M	,
.	/
Shift	
001	LWR
One Hand	14 Key

LX	MY	NZ
7	8	9
AB	EK	DJ
4	5	6
EF	GI	HO
1	2	3
PQ	R	S
0	SPT	VW
Min/Max	Help	
Close		

Fig. 139






1										2										3									
8		9		ARW		LIR				n		/																	
u		l		w		p				ARW		LIR																	
PQ		R		S		;		ENT		AB		CK		DI		TU													
n		m		,		.		/		Shift		EF		GH		H													
002 L/R: Two Hand 14 Key										LX		MY		NZ		OV													
										SPC		VW																	
										Min/Max Help																			
										Close																			











002B

[illegible]

[illegible]

004B ↑

Mary's Window      Normal      Times New Roman      10      B      I      U               


Page: 1      Section: 1      Ab: 1"      Ln: 1      Col: 1      REC: TRIC: EXC: OVR: EX: 



Fig. 142

1	2	3	4	5	6	7	8	9	WORD	ARW	LT	BKS	LY	MX	NZ	PAD
				VW									AB	CK	DJ	
				EX	AD	CK	DJ						EF	GI	HO	TU
				MA	EF	GI	HO	TU					MIN	MAX	PQ	R
				NZ	PQ	R	S	.	/				ENT			
HELP													SPC		VW	
CLOSE																
SPACE BAR																
.005																

005.B

٥٠

A hand-drawn diagram of a cell. It features a large, irregular outer boundary representing the cell membrane. Inside, there is a smaller, roughly circular structure labeled 'Nucleus' with a central dot. To the right of the nucleus is a large, oval-shaped structure labeled 'Vacuole'.



1111

0083



FIG 147

SPACE BAR												BKS		WRD ARW LTR		AB		EF		LY		PAD			
												INS		REP		DEL		CK		GI		MX			
												" "		" "		ENT		DJ		HO		NE		TY	
												MIN		MAX				PR		R		S		ENT	
																		SPC		VW					
HELP																									
CLOSE																									

001 C-1

FIG 148

1										2										3										4										5										6										7										8										9										WRD ARW LTR										BKS										D J										H O										N Z										PAD																													
Q										W										E										R										T										Y										U										I										O										P										INS										REP										DEL										C K										G F										M X																			
A										S										D										F										G										H										J										K										L										;										"										'										A B										E F										L Y										T V																			
Z										X										V										U										B										N										M										,										.										/										P Q										R										S										ENT																																							
HELP										CLOSE										SPACE BAR										MIN MAX										SPC										V W																																																																																																																							

DDI E-202

FIG 149

1	2	3	4	5	6	7	8	9	WORD	AR	WLT	BKS	AR	LTR	OKS	PAD
Q	W	E	R	T	Y	U	I	O	P	INS	REP	DEL	AB	EF	LY	
A	S	D	F	G	H	J	K	L	M	N		ENT	CK	GF	MX	TU
HELP	Z	X	C	V	B	N	M	,	.	/		MIN MAX	DJ	H6	NZ	ENT
CLOSE																
SPACE BAR													SPC			
													VW			

002-B



[illegible]

003 B



[illegible]

006B

1	2	3	4	5	6	7	8	9	WRD	ARW	LTR	BKS
0	W	E	D	A	T	Y	L	M	X	N	Z	INS
1	A	E	F	G	H	I	J	K	L	M	N	ENT
2	X	Y	Z	JK	VW	B	H	TU	,	.	/	MIN MAX
3	HELP	CLOSE	SPACE BAR									
4	5 keys											
5	PAD											
6	ENT											
7	SPC											

007B

FIG 154

1	2	3	4	5	6	7	8	9	WRD	ARW	LTR	BKS	PAD
AB	CD	E	F	G	H	I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X	Y	Z	1	2	3	4
5	6	7	8	9	0	1	2	3	4	5	6	7	8
9	0	1	2	3	4	5	6	7	8	9	0	1	2
3	4	5	6	7	8	9	0	1	2	3	4	5	6
7	8	9	0	1	2	3	4	5	6	7	8	9	0
ENT	MIN	MAX	SPC	ENT									

007 C